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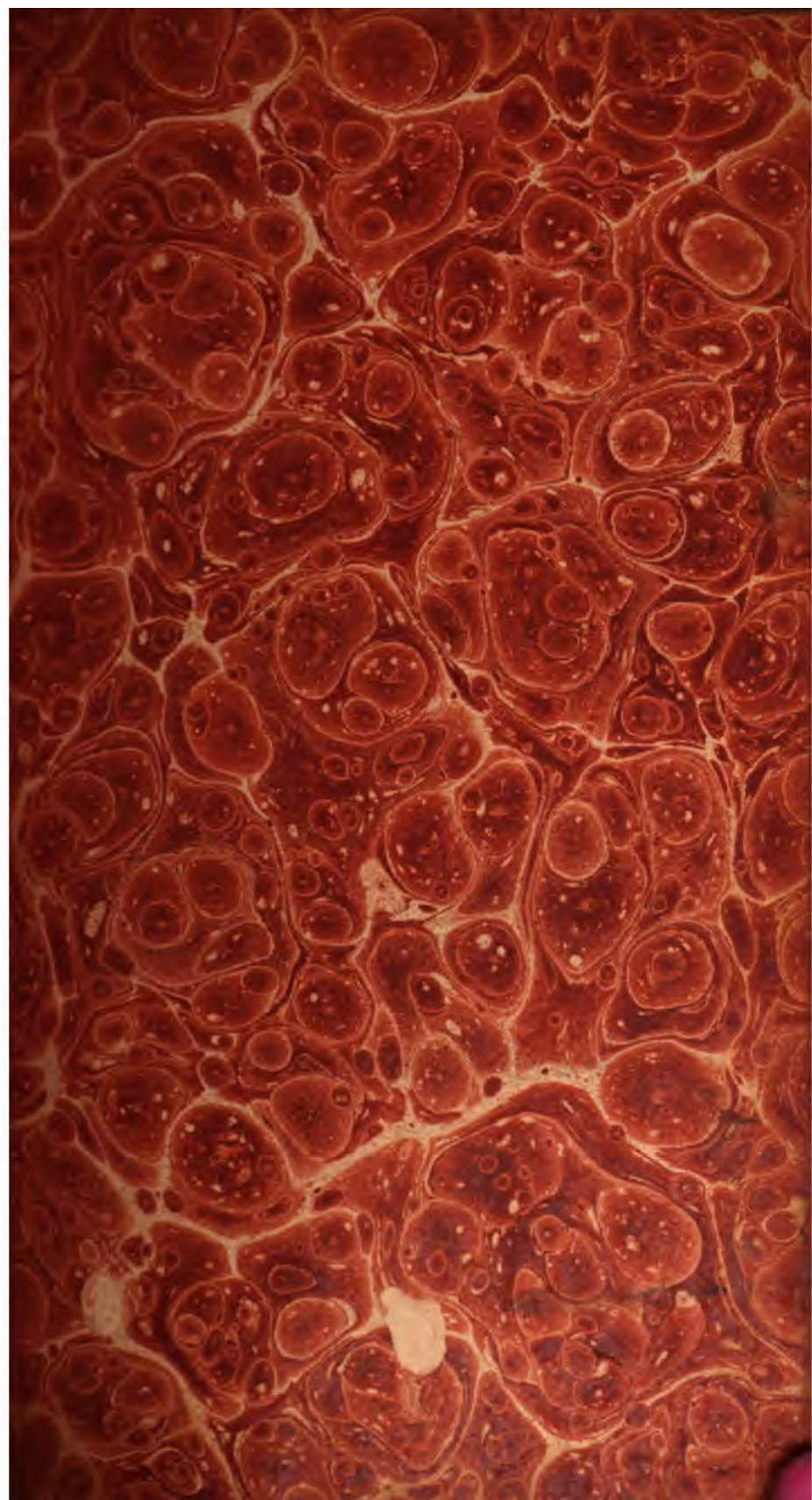


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ENGLISH BOTANY;
OR,
COLOURED FIGURES
OF
BRITISH PLANTS,
WITH THEIR
ESSENTIAL CHARACTERS, SYNONYMS,
AND PLACES OF GROWTH.
TO WHICH WILL BE ADDED,
OCCASIONAL REMARKS.

BY
JAMES EDWARD SMITH, M.D. F.R.S.
MEMBER OF THE IMP. ACAD. NATURÆ CURIOSORUM, THE
ACADEMIES OF STOCKHOLM, UPSAL, TURIN,
LISBON, LUND, BERLIN, PHILADELPHIA, AND
THE NAT. HIST. SOCIETY OF PARIS;
PRESIDENT OF THE LINNEAN SOCIETY.

THE FIGURES BY
JAMES SOWERBY, F.L.S.

—“VIRESCERE ACQUIRIT RENDO.”—*Virg.*

VOL. XIX.

LONDON:
PRINTED BY R. TAYLOR AND CO., BLACK-HORSE-COURT, FLEET-STREET;
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MDCCCIV.

LICHEN coccineus.

*Scarlet Lichen.**CRYPTOGAMIA Alga.*

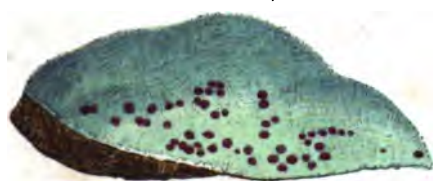
GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crustaceous and mealy, of a greenish sulphur colour. Tubercles of a vivid red, immersed in the crust.

SYN. Lichen coccineus. *Dickf. Crypt. Fasc. 1. 8. t. 2. f. 1. With. Bot. Arr. v. 3. 167.*

DISCOVERED by Dr. Smith upon the rocks called Salisbury Craigs commanding the town of Edinburgh, by Mr. Dickson upon Stonehenge in Wiltshire, and Mr. T. F. Forster jun. near Tunbridge. It is indeed a very rare species, but may also probably have been overlooked for a young or imperfect specimen of *L. ventosus*. Yet, as Mr. Dickson observes, they are very distinct species; the latter having a hard, firm, warty crust, of a yellowish colour at first, but then turning white, and never at any time mealy, but smooth and rather polished. Neither are its tubercles so uniform as those of *L. coccineus*, nor is their colour so vivid. Both are very elegant productions.



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LICHEN querneus.

Oak Lichen.

CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leprous, brownish pale yellow. Tubercles brown, convex, slightly immersed in the crust.

SYN. Lichen querneus. *Dicks. Crypt. fasc. 1. 9. t. 2. f. 3. With. v. 4. 11. Relb. Suppl. 1. 22. Sibth. 319.*

THIS Lichen is not unfrequent in the clefts of the bark upon the trunks of old oaks, particularly in an exposed situation. It spreads over the dead external angulated layers of bark, in the form of a dull sulphur-coloured mealy crust of an inconsiderable thickness; and sometimes, according to the remark of Mr. Dawson Turner, it clothes other Lichens, and disguises them so that they might be mistaken for new species. The tubercles are minute, regular in shape and size, a little convex, of a dark dull brown, almost black when dry, without any perceptible border. They are chiefly to be found in moist weather, at any time of the year, but not very frequently.

This specimen was sent us by the Rev. Mr. Alderson, from Norfolk, where the *Lichen querneus* was first discovered and characterized by Mr. Dickson. It is somewhat a-kin to *L. coccineus*, see t. 223., and still more to the *Lepra lutescens* of Hoffmann, *Pl. Lichenosæ*, t. 23. f. 1, 2. the shields of which when discovered may perhaps prove them to be one species. When young, this species has a narrow blackish border.

403.



Leptodermis

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LICHEN gelidus.

Flesh-coloured Alpine Lichen.

CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust almost inseparable, lobed, whitish, smooth, with a few brown lobed warts in the centre. Shields concave, rose-coloured, with a white, smooth, elevated border.

SYN. Lichen gelidus. *Linn. Mant.* 133. *Dicks. Crypt. fasc.* 2. 19. *H. Sicc. fasc.* 7. 25. *With. v.* 4. 26. *Hull.* 291.L. Heclæ. *Fl. Dan. t.* 470. *f.* 2.

THE first specimens of this rare and curious *Lichen* ever observed by any botanist in Britain, were I believe communicated to me in 1782 from the Glen of Leney near Stirling by my friend Dr. Francis Buchannan, now at Bengal. I was persuaded, though then a very young botanist, it could be no other than the *L. gelidus* of Linn. and ventured to contend, against many higher authorities, that the *gelidus* of Hudson was only *ventosus* bleached by age. Linnæus evidently describes the singular brown tubercles in the centre as the fructification, instead of the real shields, which are of very rare occurrence, and were not in the specimens he saw. The Rev. Mr. Harriman and Mr. Oliver have been so fortunate as to find some in perfection, growing on large stones near the High Force, Teesdale, and obligingly communicated them to Mr. Sowerby.

This species can be confounded with no other. It consists of a white smooth crust, with difficulty to be cut whole from the rock even in wet weather, and forming small roundish patches, lobed in the margin, and partly assuming the appearance of an imbricated *Lichen*. In the centre are a few elevated, brown, lobed warts, whose use and functions are unknown; and around them, in perfect plants, several small round shields, of a delicate rose-colour when wet, with a very white smooth elevated margin.



Strophomena

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LICHEN ventosus.
Red-spangled Tartareous Lichen.

CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust rugged, formed of tumid warts, of a pale sulphur-colour. Shields irregular, a little swelling, blood-red, with a narrow pale border.

SYN. Lichen ventosus. *Linn. Sp. Pl.* 1607. *Achar. Prod.* 46. *Huds.* 527. *With.* v. 4. 16. *Hull.* 288. *Lightf.* 806. *Dicks.* *H. Sicc. fasc.* 5. 23.

L. cruentus. *Web. Goett.* 184. t. 1.

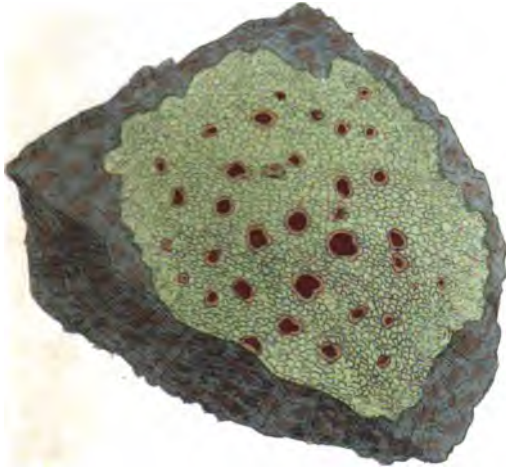
L. gelidus. *Huds.* 528.

Lichenoides tartareum lividum, scutellis rufis, margine exili. *Dill, Musc.* 133. t. 18. f. 14.

WE have received this elegant Lichen from Durham by favour of the Rev. Mr. Harriman, and have ourselves gathered it in great perfection on Ben Lomond; on Casterton Fell, near Kirkby Lonsdale, Westmoreland; and in some other places. It grows on large exposed stones of the granite kind.

The crust spreads in patches 6 or 8 inches broad, and may in moist weather be pared off entire from the rock. It is moderately thick, apparently a congeries of crowded swelling smooth (not mealy) warts, of a pale yellowish green or sulphur-colour, which however changes to a tolerably pure white in the course of one winter's growth, for the plant appears to last several years. The shields are numerous, scattered, of a beautiful crimson or blood-red, irregular in size and shape, a little tumid, and encompassed by a margin of the colour of the crust, becoming narrower and stained with red by age. Little black rugged warts are also scattered over the surface of the crust, or in its cracks; we can only guess them to be the male part of the fructification. The old shields turn black in decay, and often bear young ones.

That this when white is the *L. gelidus* of Mr. Hudson, I ventured many years ago to presume from his description, and the synonym (though wrong transcribed in the *Fl. Angl.*) of Dillenius. For the true *gelidus* see our v. 10. t. 699.



July 1, 1801. Published by J. Sowerby, London.

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LICHEN subfuscus.

Brown-shielded Crustaceous Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thin, continued, smoothish, brownish-white. Shields sessile, slightly convex, reddish-brown, with a tumid, whitish, entire border.

SYN. Lichen subfuscus. *Linn. Sp. Pl.* 1609. *Ach. Prod.* 47. *Huds.* 529. *With. v. 4.* 21. *Hull.* 290. *Relh.* 451. *Sibth.* 323. *Abbot.* 262.

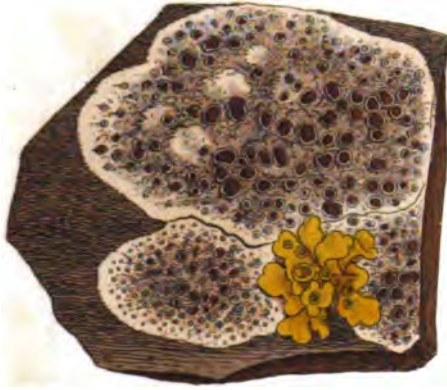
Lichenoides crustaceum et leprosum, scutellis subfuscis. Dill. in Raii Syn. 71. *Musc.* 134. *t.* 18. *f.* 16.

Parmelia subfusca. Ach. Meth. 167.

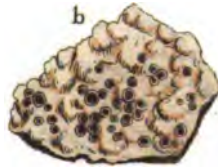
VERY common on the smooth barks of trees. The crust forms roundish patches, of various sizes, and is uninterrupted, usually very thin, though calcareous, minutely granulated, but not leprous nor powdery, of a slightly brownish or greyish white. On dead wood it sometimes by age becomes tumid and broken, and on walls now and then of a considerable chalky substance, but is never so thick nor so white as the crust of *ater*, *t.* 949. This wall variety was given us by Mr. Turner, see fig. b, but is not that meant by Dillenius, which is *epipolius*. See *Tr. of L. Soc. v.* 7. 111.

The shields are abundant, often crowded, their disk rather convex, usually of a bay or chesnut colour, but varying in brightness, often parti-coloured, or mixed with a pale waxy hue, as if the impregnation of the seeds had failed there, and the disk had withered or dropped out. The border is of the substance and colour of the crust, or rather whiter, entire, or slightly crenate, especially when old. In a variety sent by Mr. Lyell, from beeches in the New Forest, the crust is greenish, the disks of the shields darkish brown, very tumid, and in a manner proliferous or compound, see fig. c.

a



b



a



c



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[1683]

LICHEN incanus.

Soft Mealy-crusted Lichen,

CRYPTOGAMIA *Algæ*.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leprous, very mealy, soft, uneven, greenish grey. Shields scattered, sessile, brown, with a paler brown, even, smooth border.

SYN. Lichen incanus. *Ach. Prod.* 7. *With. v.* 4. 2. *Relh.* 444. *Sibth.* 316. *Hoffm. Enum.* 7. t. 1. f. 6, *Lepraria incana. Ach. Meth.* 4.*Byssus incana. Linn. Sp. Pl.* 1639? *Huds.* 609, *Hull.* 308. *Abbot.* 278. *Lightf.* 1006.*B. pulverulenta incana, farinæ instar strata. Dill. in Raii Syn.* 56. *Musc.* 3. t. 1. f. 3,

THE crust of this Lichen is very common on trees, shady rocks, &c., often running loosely over mosses, and forming patches several inches broad, pale greyish or greenish white when dry, and of a very soft, loose, mealy, granulated texture; when wet it is still more tender and friable, and assumes a light glaucous green hue. This is the *Byssus incana* of authors, but we are doubtful whether Linnæus did not rather understand by that name the barren crust of *Lichen byssoides*, v. 6. t. 373. The shields were first discovered in January last by C. Lyell, Esq., on beeches in the New Forest, Hampshire. We have been also favoured with fine specimens from Mr. D. Turner, gathered by him in Sussex this spring. These shields are scattered, sometimes rather clustered, sessile, small, brown, of a horny or waxy appearance, nearly flat; the margin thick, smooth, elevated, of the same colour or rather paler, without any border from the substance of the crust itself. The internal substance of the shields is white.

The discovery of these shields proves the plant to be sufficiently distinct from *L. muscorum*, v. 9. t. 626, see *Ach. Prod.*, and moreover teaches us to mistrust the generic distinction between *Lichen* and *Lepraria*. May the *propagula* of the latter be analogous to the buds or bulbs of some other vegetables?



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L I C H E N byssinus.

Mealy-bordered Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crustaceous, powdery, brownish. Shields flat, dull-yellow, with a very white, mealy, elevated border.

SYN. Lichen byssinus. *Dicks. Crypt. fasc. 2. 19.*
With. Bot. Arr. v. 3. 174. ed. 3. v. 4. 25.

PROFESSOR Hoffmann of Gottingen appears to have originally described this little *Lichen*, in his *Enumeratio Lichenum*, a work we have not at hand. Mr. Dickson first observed it in this island, growing on trees and stones in Scotland. Our specimen is upon a piece of brick, and was found near London.

The crust is thin, with a vague indeterminate margin, slightly powdery, of a brown more or less dark. Sometimes it acquires a degree of thickness equal to that of coarse paper, and then its inner substance is whitish. The shields project a little. Their disk is very flat, of a dull-yellow or buff-colour; but the white elevated downy margin, which when arrived at maturity is as it were composed of two coats or layers, renders them very conspicuous.

This has much resemblance at first sight to the *L. marmoreus*, mentioned also by Mr. Dickson in his 2d fasciculus; but in that the crust is whitish or ash-coloured when present, and so thin and tender that in an advanced state of the plant it is not to be found at all; its shields moreover are reddish, their white margin thicker and more inflexed, downy rather than mealy, of one simple coat, and crenate.



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LICHEN frustulosus.

White-scaled Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, yellowish white, in dispersed, tumid warts, at length somewhat imbricated, lobed, and variously shaped. Shields dark brown, with a white, crenate margin like the crust.

SYN. Lichen frustulosus. *Dicks. Crypt. fasc. 3. 13.*
t. 8. f. 10. With. v. 4. 19. Hull. 289. Ach. Prod. 76.

Parmelia frustulosa. Ach. Meth. 172.

P. atra β, argopholis. Ach. Meth. Suppl. 32.

COLLECTED on the micaceous rocks of the mountains of Breadalbane by Mr. Borrer, who assures us of the above synonyms, on the authority of Mr. Dickson's herbarium, and of specimens from the celebrated Acharius. The latter could scarcely be aware that the plant he received from Mr. Wahlenberg, by the name of *Parmelia argopholis*, was what he had already adopted from Mr. Dickson's work; but we are much surprised that he should now consider it as a variety of our *L. ater*, *t. 949*, from which its mode of growth is surely fundamentally distinct.

We do not find the black under-crust or stratum described by Mr. Dickson, probably because our plant is not old enough. Ours consists of little, roundish, tumid, smooth, tartareous lumps, externally of a pale-yellowish or greenish white, and very smooth, which at length become crowded, lobed at the edges, and somewhat imbricated, assuming various shapes. Shields numerous, rather elevated; their disk dark brown, concave at first, finally convex and blackish; their border of the substance of the crust, thickish, inflexed, crenate, and sometimes jagged, at the inner edge.—The name we retain for this species is unexceptionable, and has the precedence in point of date. That of Wahlenberg, equally good, we have translated in the English appellation.

2273



examined by Dr. Herbert Smith

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LICHEN atro-cinereus.
Ashy-black Crustaceous Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tessellated, greyish-black, smooth. Shields several together, depressed, brownish-black, with a paler border; at length crowded, elevated, the border being obliterated.

SYN. *Lichen atro-cinereus.* *Dicks. Crypt. fasc. 3. 14. t. 9. f. 2. With. v. 4. 19. Hull. 289.*

L. coracinus. *Ach. Prod. 79?*

Verrucaria coracina. *Hoffm. Germ. v. 2. 183?*

Parmelia coracina. *Ach. Meth. 157?*

FOUND on rocks by Mr. Dickson, one of whose own specimens, in Mr. Turner's collection, is drawn in our plate.

The crust is hard and dense, broken into various obtuse angular fragments, internally pale grey, but of an ash-coloured black on the surface, smooth and destitute of mealliness. Shields two, three, or more, in each fragment, depressed or somewhat immersed in the crust, small, roundish, at first flattish, of a rusty black, with a border of the same colour; afterwards, according to Mr. Dickson, elevated, crowded, black, losing their margins and becoming tubercles.

Acharius appears to have taken from Hoffmann the idea of the *Verrucaria coracina* being the same, not having seen either himself. However this may be, Mr. Dickson's is the original name.



Dec: 1899 published by J. J. Laverdy, London.

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LICHEN crenulatus.

Little Crenate Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust scattered, ash-coloured, very thin. Shields minute, dispersed, brownish-gray, with an elevated, crenate, whitish margin.

SYN. Lichen crenulatus. *Dicks. Crypt. fasc. 3. 14. t. 9. f. 1. Achar. Prod. 76. With. v. 4. 17. Hull. 289.*

L. dispersus. Achar. Prod. 49.

FOUND on lime-stone rocks in the mountainous parts of England. The Rev. Mr. Harriman communicated this specimen from Egleston, Durham. Mr. Dickson mentions Yorkshire also as its native county. We have found it by authentic specimens to be the *dispersus* of Dr. Acharius, who, not being aware of its having been already described by Mr. Dickson as *crenulatus*, gave it a new name. In justice to our friend we retain his original one, which is in itself excellent.

The crust is gray or blackish, but so thin and fugacious as not to be always discernible. Shields more or less scattered, a little raised, various in size, but all very small; their disk obscurely convex, smooth, waxy, of a yellowish or brownish gray; their margin very pretty and conspicuous, elevated, rounded, smooth (not mealy), elegantly notched so as to look almost, as it were, beaded, of a pale yellowish white.

Mr. D. Turner has found on Burgh Castle, Suffolk, what seems a variety of this *Lichen* with a whiter crust and blacker shields; and indeed some shields on the Durham specimens are found with a gray or lead-coloured margin.



Sept. 1. 1861. Published by J. L. Smith, London.

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LICHEN brunneus.

*Brown Earth Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust of minute, imbricated, grain-like, lobed, olive-brown scales. Shields crowded, flattish, red-brown; their margin elevated, narrow, crenate, of the colour of the crust.

SYN. Lichen brunneus. *Achar. Prod.* 99.

L. pezizoides. *Dicks. Crypt. fasc.* 1. 10. t. 2. f. 4.
With. v. 4. 21. *Hull.* 290. *Relh.* 452.

L. multiflorus. *Ehrh. Crypt.* 156.

Parmelia brunnea. *Achar. Meth.* 186.

Patellaria nebulosa. *Hoffm. Pl. Lich. v.* 2. 55. t. 40. f. 1.

Psora coronata. *Hoffm. Pl. Lich. v.* 3. 3. t. 56. f. 1.

FIRST discovered in Britain by the son of Dr. Burgess in Dumfriesshire, and by Dr. Buchannan near Stirling. Our specimens were gathered on marine rocks near Bangor, by Mr. D. Turner. It generally grows on the earth, among turf or decayed mosses, in moist situations; and sometimes clothes foliaceous Lichens, looking like their fructification; an instance of which was shown us by the Rev. Mr. Williams of Shropshire.

The crust consists of minute imbricated lobed leaves or scales, of an olive brown, somewhat glaucous. The shields are excessively crowded in some specimens, so as to become angular; in others they are more distant and round. They vary in size and in colour, being sometimes pale brick-coloured, sometimes dark chesnut. Their disk is nearly flat, surrounded by an elevated but not broad border, of the colour and substance of the crust, crenate, but not leafy.

Mr. Griffith authorizes us to say this is the plant he took for *L. tenuissimus*; see *With. v.* 4. 61 and 21.

We cannot see why the original name *pezizoides* should not have been retained, as we presume this is Weber's plant. Dr. Acharius indeed rather puzzles us in his *Methodus Lichenum* just published, by quoting Weber and Dickson, and yet saying "the synonym in Dickson ought to be excluded." Now he has no synonym but this of Weber, whose specific name he adopts.

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Described 1802. Published by T. Sowerby, London.

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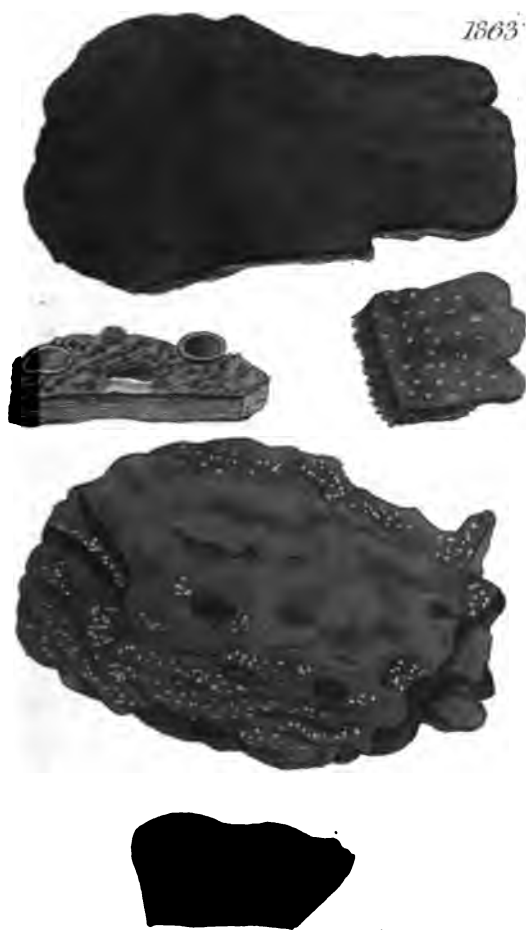
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1863



M. J. Schuchert, Jr. by J. C. Schuchert, London.

LICHEN viridescens.

Greenish Horny-tubercled Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thin, mealy, indeterminate, scattered, pale green. Tubercles numerous, convex, rugged, brown, semitransparent; at length blackish.

SYN. Lichen viridescens. *Schrad. Spicil.* 88. *Ach. Prod.* 50.

Lecidea viridescens. *Ach. Meth.* 62.

L. hypnophila. *Winch. v. 2.* 37.

FOUND by Mr. D. Turner on Buxton church, Norfolk, as well as on the ruins of Carrow abbey, near Norwich, and in other places, being most vigorous and apparent in damp autumnal weather.

The crust runs over the irregular surface of decayed *Hypna*, in the manner of *L. muscorum*, *t.* 626, and is consequently scattered, friable, and indeterminate, of a mealy substance and pale green dirty hue. The tubercles when young are flat, light brown with a paler, but not elevated, edge, of their own substance. Afterwards they grow convex, more or less rugged, darker coloured, but retain their original horny semitransparency. Finally they become almost black, and in some measure spherical. In their original colour and ultimate shape they essentially differ from *muscorum*, *t.* 626, nor is their crust so white. Mr. Turner observes that the young tubercles betray an affinity to *vernalis*, *t.* 845, but they have no elevated border, nor are they when full grown of so light a colour.

We have Mr. Borrer's authority for the name of Schrader, which was determined by a specimen from that author himself.

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LICHEN quadricolor.

Four-coloured Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust leprous, grey, with white granulations. Young shields gelatinous, flesh-coloured, with a white border; old ones blackish.

SYN. Lichen quadricolor. *Dicks. Crypt. fasc. 3. 15. t. 9. f. 3. Achar. Prod. 73. With. v. 4. 24. Hull. 292.**L. decoloratus. Achar. Prod. 50.**L. granulosus. Ehrh. Crypt. 145.**Patellaria decolorans. Hoffm. Pl. Lich. v. 2. 54. t. 39. f. 2.*

FIRST observed by Mr. Dickson on the Scottish mountains, and since by Mr. D. Turner, at Lound, near Yarmouth, as well as by the Rev. Mr. Harriman, at Eggleston, Durham. It grows on the ground, in heathy sandy places, being in perfection during the winter season.

The crust is thin and inseparable from the light crumbling soil, of a grey or brownish hue, thickly sprinkled with minute white granulations, which betray an affinity to the section *Psoroma* rather than *Patellaria*, under which last Dr. Acharius has ranged this species. The shields are small, tolerably numerous, sessile, when moist remarkably gelatinous and convex, in a dry state nearly flat. When young they are of a yellowish flesh-colour, with a smooth narrow white border; but by age both disk and border become of a brownish black.

Some good botanists have confounded this with *L. Icmadophila* of Ehrhart. We know it to be his *granulosus* from a comparison of specimens, and it is certainly Hoffman's *Patellaria decolorans*. Ehrhart's name is not very expressive, and has been neglected; in choosing between *decoloratus* and *quadricolor*, we have preferred the latter; not, we hope, out of undue partiality to our friend Mr. Dickson, but because it is the oldest, and at least as good as the other. The *granulosus* of his 4th fasciculus we believe to be a different plant.





[2155]

LICHEN cyrtellus.
Tumid Brown-shielded Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

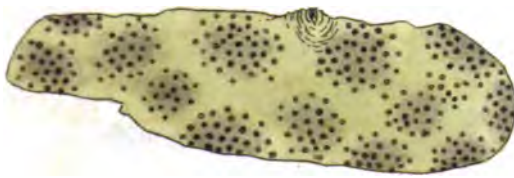
SPEC. CHAR. Crust very thin, continued, smoothish, glaucous-white. Shields scattered, small, sessile, brown, with a lighter border of their own substance ; at length hemispherical, blackish, the border disappearing.

SYN. *Lecidea cyrtella*. *Ach. Meth.* 67. *Winch v.* 2. 38 ?

WE presume this may have been overlooked in an early state for *L. subfuscus*. *t.* 2109, from which it differs in being a *Lecidea* ; and in a more advanced one for *parasemus*, *t.* 1450, from which it is known by its far less black, less numerous, and less convex shields, whose border when young is almost white, not coal-black. We know not of any other species with which it can be confounded. We have this Lichen from Mr. Turner, Mr. G. Don and Mr. Borrer, found in their several neighbourhoods, so that it appears to be not very rare.

The crust is thin, but constant and continued ; rather glaucous and mealy when young ; subsequently smoother and of a pure white. Shields small, scattered, sessile ; their young disk flat, narrow, light-brown, with a thick, smooth, still lighter-coloured border of the same substance, which becomes blackened, thinner, and at length nearly obliterated by age, when the disk grows singularly convex, and brownish-black. Some shields are lobed or compound, as in *L. subfuscus*, *t.* 2109, c.

2155



From 1100, published by J. S. Sowerby, London

v

1

LICHEN vernalis.

Vernal Lichen.

CRYPTOGAMIA Algae.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles in which the seeds are imbedded.

SPEC. CHAR. Crust thin, powdery, whitish-green. Shields at length almost globose, clustered, of a brown or rusty flesh-colour.

SYN. Lichen vernalis. *Linm. Syst. Nat. ed. 12. v. 3. 234.*
Achar. Prod. 51. Lichtf. 805. Wiltb. v. 4. 14.
*Hull. 288. Relb. 423.**L. sphæroides. Dickf. Crypt. fasc. 1. 9. t. 2. f. 2.*
*Wiltb. v. 4. 15. Hull. 288.**Verrucaria rubella. Hoffm. Fl. Germ. v. 2. 174.*

NOT unfrequent on the barks of trees, or on mosses in low damp places.

The crust is irregular, thin, powdery or granulated, of a pale dull olive hue, whiter when dry. Shields when very young flattish, with a thick border of their own colour, which however is soon obliterated, and the disk becomes very convex, almost globose, often lobed, generally of a pale rusty hue, verging towards a flesh-colour, but more frequently of the colour of yellow ochre, and often brown. These tubercles (for so they are in a full grown state) are of different magnitudes, to the size of a moderate pin's head, and variously clustered together.

Mr. Hudson has caused great confusion by transcribing the Linnæan character of this *Lichen* for his *ferrugineus*, which is a very different species, the *crenularius* of Withering, and figured twice by Hoffmann, *Pl. Lich. t. 12. f. 1*, and *t. 35. f. 1*. We cannot but agree with Dr. Acharius, that Mr. Dickson's *L. sphæroides* is merely a variety of *vernalis* with rather more protuberant shields; and indeed Mr. D. Turner and myself had, from the consideration of several original specimens, previously formed the same conclusion, and fixed the above synonyms.



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LICHEN thelostomus
Nipple-shielded Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, thin, continued, brown, minutely cracked. Shields sessile, hemispherical, umbilicated, reddish; with a thick, elevated, even border, of the colour and substance of the crust.

SYN. *Verrucaria thelostoma. Ach. in Winch v. 2. 44.*

OUR liberal friend Mr. Winch, to whom we have often been indebted, has enabled us, by an authentic specimen, to understand this Lichen; and if we differ from him and the learned Acharius in its arrangement, we are open to correction, and our figure, which is very exact, will enable those who are competent to judge. We received this species formerly from the Rev. Mr. Harriman, its original discoverer on whinstone rocks near Eggleston, Durham. No other person seems to have found it, and it was new to Acharius himself. The crust forms roundish patches, and is thin but tartareous, finely cracked when dry, scarcely bordered, of a dirty brown throughout. Shields numerous, not much crowded, small, sessile, hemispherical and rather prominent; their border of the colour and texture of the crust, tumid, elevated, very smooth and entire; the disk small, darkish brown when dry, red or cinnamon-coloured when wet, in which state it is clearly distinguishable from the border, and decidedly conformable to the character of *Lichen*, or the *Parmelia* of Acharius. The centre indeed is a little elevated and umbilicated, which, without dissection, or an attention to the proper border, might give the idea of a *Verrucaria*.



May 1 1880 published in J. L. L. L. L.

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[1651]

LICHEN rosellus.

*Little Rosy-shielded Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thin, granulated, pale ash-coloured. Shields swelling, flesh-coloured, with a pale smooth border.

SYN. Lichen rosellus. *Ach. Prod.* 52. *Persoon in Ust. Annal. fasc.* 7. 25. *Schrad. Spicil.* 85.*L. albo-incarnatus.* *Wulf. in Jacq. Coll. v.* 3. 106. *t.* 2. *f.* 3.*Lecidea rosella.* *Ach. Meth.* 57.*Verrucaria rosella.* *Hoffm. Germ. v.* 2. 176.

FOUND on trees in the New Forest, Hants, by Miss Bidulph, who has favoured us with specimens. Mr. Turner has received the same from Scotland. It agrees with an original specimen of Mr. Persoon's; and as no sufficient figure of it is extant, we are induced to publish one, though we could have wished first to complete our observation of the *L. angulosus* of Acharius and its varieties, to which this species seems too nearly allied.

The crust is thin, greyish white, granulated rather than mealy, spreading regularly over smooth bark, but broken and almost obliterated on old trees. Shields numerous but not much crowded, small, sessile; their disk almost from the first slightly convex, smooth not mealy, flesh-coloured; their margin in a young state very thick, smooth, even, pale or whitish, and somewhat waxy, growing thinner by age, and at length obliterated in consequence of the swelling of the disk.

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LICHEN ericetorum.

Heath Lichen.

CRYPTOGAMIA Algae.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust leprous, granulated, greenish-white. Shields nearly sessile, flat, flesh-coloured, with a narrow whitish border.

SYN. Lichen ericetorum. *Linn. Sp. Pl.* 1608. *Huds. Fl. An.* 527. *Fl. Dan. t.* 472. *f.* 4.— β *Lightf. Scot.* 809. *With. Bot. Arr. v.* 3. 168.*L. Icmadophila. Linn. Suppl.* 450. *Retz. Scand.* 273.*L. elveloides. Web. Gott.* 186.*L. æruginosus. Scop. Carn. v.* 2. 361. *Jacq. Fl. Austr. v.* 3. *t.* 275. *Murr. in Linn. Syst. Veg. ed.* 14. 958.—*Sibth. Ox.* 321?

THIS species is found occasionally on turfy heaths, growing generally on the ground, and forming large white or greenish patches, very conspicuous and beautiful in damp weather. The crust is not very thick; its under side is attached by numerous radicles; the upper one granulated, leprous to the sight, but not powdery to the touch. The shields are often immersed in the crust, more rarely elevated on extremely short foot-stalks. Their outside, and very narrow border, whitish; their disk quite flat and smooth, flesh-coloured; when young glaucous. When this Lichen grows on rotten wood, especially in the shade, its crust is of a light verdigrise green, as figured by Jacquin under the name of *æruginosus*. Dr. Smith found it so in woods at Matlock, and Mr. Davall in Switzerland. This however is clearly only a slight variety of the original *ericetorum* of Linnæus, which in its healthy unfaded state is always greenish. No species has been less clearly defined, Linnæus himself having confounded it with another very different kind (see our *tab.* 374); and English writers have in general been so indefinite upon the subject, it is not easy to understand which of these two they intended,

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1

LICHEN marmoreus.

Salmon-coloured Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust pale, thin, scattered. Shields cup-shaped, salmon-coloured, with a thick, elevated, inflexed, pale flesh-coloured, often crenate, border.

SYN. Lichen marmoreus. *Dicks. Crypt. fasc. 2. 18. Wub. v. 4. 22. Hull. 291.*

L. Ulmi. *Swartz. Nov. Act. Upsal. v. 4. 247. Herb. Linn.*

L. tricolor. *Wub. v. 4. 23. t. 31. f. 6. Hull. 291.*

FOR the most part this Lichen is only to be discovered by its shields, which are found scattered over decayed mosses in wet shady places, generally in mountainous countries; though it has been found on stone walls in Norfolk in a northern exposure; as on Corpusty church, by the Rev. Mr. Bryant, and Mr. D. Turner. Mr. Griffith has found it on calcareous sandstone in Wales. Sometimes it occurs on trees; and Dr. Swartz having found it on the Elm in Sweden, called it *L. Ulmi*. When it grows on trees the crust is visible by its greenish white colour, though extremely thin, and by no means lobed or granulated; on old mosses it soon vanishes almost entirely, what remains of it being only such slight portions as are necessary to fix the shields to the minute leaves, fibres, or twigs, on which they grow. Each shield is but the size of the smallest pin's head, or smaller, prominent, concave, of a fine salmon or aurora colour, encompassed by a thick elevated inflexed margin of the most delicate pale flesh-colour, and with a marble-like semitransparency, externally so uneven as to appear mealy or downy, which however it is not. The disk at length falls out, and this waxy covering often remains entire.

We apprehend a great error in the supposed metamorphosis of this plant into *Sphaeria fulcata* as mentioned in Withering.

739.



[2218]

LICHEN ulmi.

*Elm Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust leprous, white, thin, uneven, continued. Shields numerous, sessile, concave, brownish-salmon-coloured, with a thick, white, powdery, crenate, inflexed border.

SYN. Lichen ulmi. Swartz. Nov. Act. Upsal. v. 4. 247. Ach. Prod. 54.

L. pallidus. Hoffm. Enum. 50. t. 5. f. 2.

Patellaria rubra. Hoffm. Pl. Lich. v. 1. 81. t. 17. f. 2.

Parmelia rubra. Ach. Meth. 170.

GATHERED by Mr. W. Borrer on the bark of old elms near Greta bridge, Yorkshire.

This is an elegant species. The very white leprous crust is continued widely over the bark, but though occasionally rugged or granulated, is commonly very thin. Numerous, and sometimes crowded, shields are scattered over it, which are sessile, with a very neat, thick, inflexed, crenate, somewhat powdery border, of the substance of the crust, and a concave disk of a brownish salmon-colour, turning a little darker by age. When old the disk falls out, leaving the white border hollow like a cup.

In our description of *L. marmoreus*, t. 739, we, like many others, confounded this species with that. Having discovered our error, we communicated it to Dr. Acharius, till then lying under the same mistake, who has, with his usual candour, corrected it in his *Methodus*, p. 170. Mr. Turner, on the authority of a named specimen, suggests that our present plant is Mr. Dickson's *marmoreus*, but we are certain he comprehended the real one also, which is *cupularis* of Hedwig, *Crypt.* v. 2. 58. t. 20, B, and consequently of Acharius; Mr. Dickson's *cupularis* being, according to Mr. Turner, *L. Acharii*, figured in our t. 1087.

The white crust, place of growth, duller hue of the shields and their pure white border, distinguish *L. ulmi* from *marmoreus*, whose crust, when it can be detected, is of a dirty green or grey, running over mosses and stones, its shields redder, with a flesh-coloured wax-like border.



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LICHEN corneus.

Horny-cupped Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

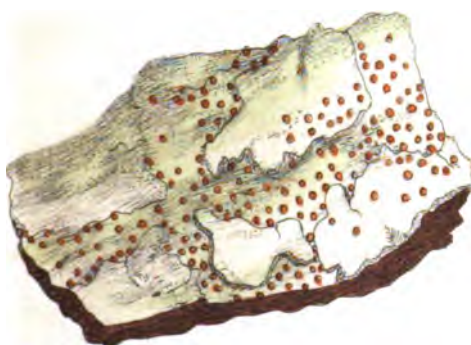
SPEC. CHAR. Crust mealy, thin, white. Shields a little elevated, brown, semi-transparent, with a thick, elevated, even, smooth, paler border.

SYN. Lichen corneus. *Witb. v. 4. 20. t. 31. f. 3.*
Hull. 290.

FIRST found by J. W. Griffith, Esq. on oaks at Garn near Denbigh, and communicated to Dr. Withering, the only writer (except Dr. Hull) who appears hitherto to have noticed this species. We have received fine specimens from Eggleston, Durham, by favour of the Rev. Mr. Harriman; Mr. W. Brunton also has found it on oaks in Studley wood near Ripon. In the more champaign parts of England it has not yet occurred.

The thin, mealy, white (or greenish-white) crust spreads closely over the inequalities of the bark in small interrupted patches. The shields are pretty numerous, irregularly scattered, a little elevated on a swelling, as it were, of the crust, which enfolds their base. They are small, nearly uniform in size, concave, of a brown horn-like colour, in some degree transparent, especially the border, which is paler and rather waxy, much elevated, smooth and even.

With the greatest deference for Mr. Griffith's opinion, whose accuracy and penetration we have experienced, we conceive this plant, which sometimes grows mixed with *Lichen pulicaris*, may have led him to suspect the metamorphosis of *L. tricolor* (that is *marmoreus*) into *pulicaris*, see *Witb. v. 4. 23.* The shields of *corneus* have in fact an occasional resemblance to those of *marmoreus* when both are in decay.



From the collection of the British Museum.

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[1735]

LICHEN Griffithii.

Griffithian Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thin, white, smooth. Shields sessile, scattered, pale purplish waxy brown, with a smooth margin of the same colour; blackened in decay.

SYN. Lichen corneus. *With. v. 4. 20. t. 31. f. 3. Hull.* 290, but not our *t. 965.*

WHAT we have described as *L. corneus*, *t. 965*, proves not to be that of Withering, but a species never before published. As the name is admirably suited to that species, and is now sanctioned in the *Methodus* of Professor Acharius, and as the original *corneus* neither answers to that name, nor could possibly be made out by Dr. Withering's description and figure, we venture to apply to the latter the name of its original discoverer J. W. Griffith, Esq. of Garn near Denbigh, whose labours in this department of botany well merit the honour.

L. Griffithii is found on oaks in Denbighshire and Durham, from which last county we have been favoured with it by the Rev. Mr. Harriman. Mr. Turner finds it common on birch bark near Yarmouth.

The crust is thin, smooth, even and white, conforming to the inequalities of the bark, and spreading indeterminately. Shields scattered, sessile, flat, irregular in shape and size, of a peculiar pale purplish brown, with a waxy transparency, and their border is of the same hue. When young they are paler, especially the border, but by age that part first, and finally the whole shield, turns black. Small black bodies are scattered over the crust, which seem to be old dwindled shields, which if so are very remarkable in their mode of decay.

1735



May 1887. Published by the Society, London.

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LICHEN lynceus.

Speckled Lichen.

CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust white, smooth, uniform. Tubercles numerous, depressed, oblong, curved, rounded at each end, gray, with a black entire edge.

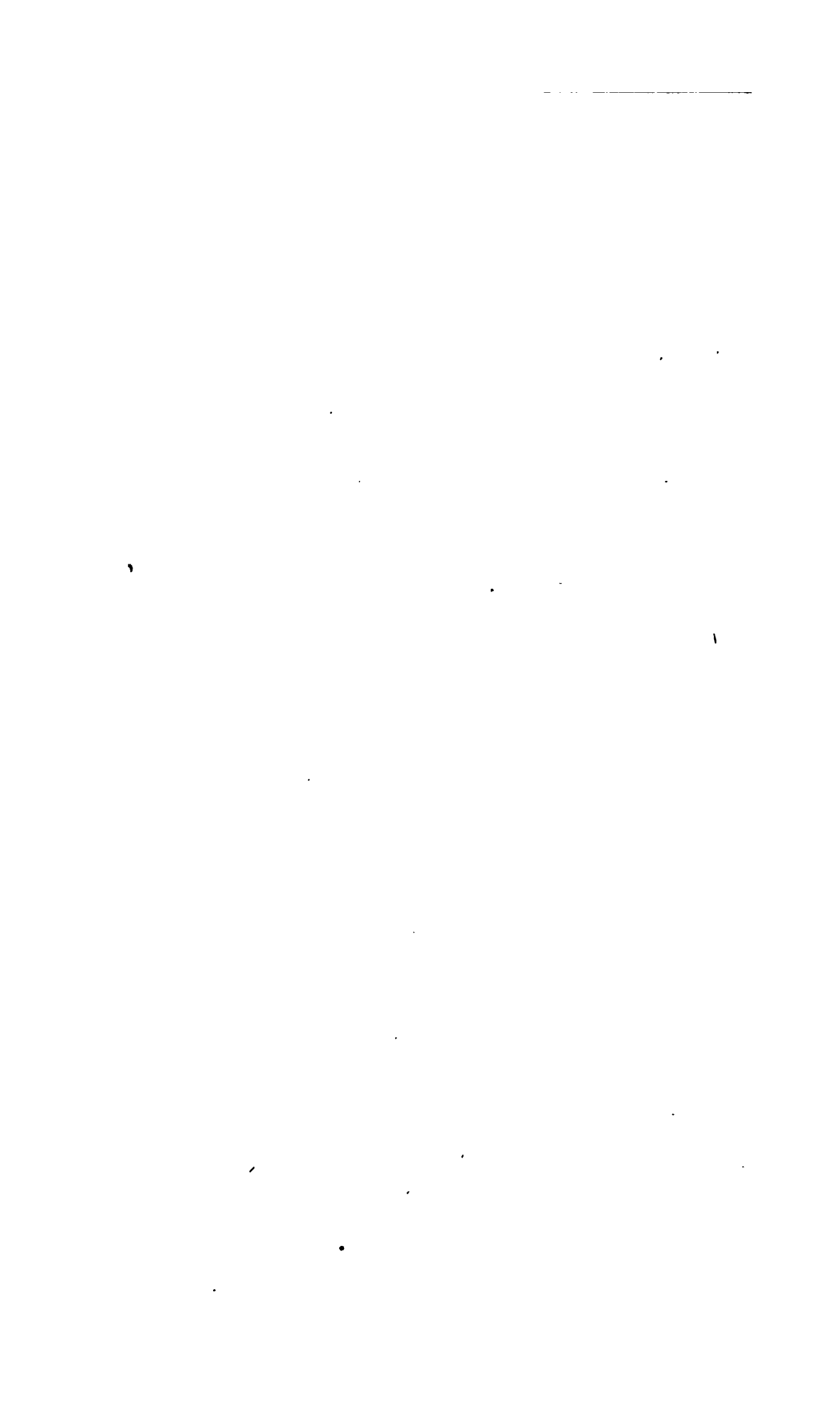
MR. SOWERBY discovered this Lichen about 5 years since, in Hainault forest, Essex, where it often covers the rugged bark of old oaks almost entirely. Mr. D. Turner has since observed it on an oak near Windsor. We have not met with any figure or description to which this plant can be referred. The plates of Wulfen's and Hoffmann's *albo-cornulescens* at first sight seem to accord with it, but on accurate examination will be found widely different.

Its crust is very white, smooth, and uniform, scarcely a hair's breadth in thickness, closely applied to the bark, and conforming to all its sinuosities and protuberances. Tubercles exceedingly numerous, small, thick-set, regularly spread over the crust, in which they are partly immersed. Their form is various, but generally oblong, curved, rounded at each end, often kidney-shaped; their surface flat or depressed, grayish, with a narrow, black, scarcely prominent, margin. In time their whole surface becomes black, and then the margin is no longer perceptible.

This species should be placed near *L. scriptus* and *rugosus*, from both which it is however quite distinct. Its tubercles are never branched, nor do they ever terminate in acute points; by which they may be known even in a young state, when they are longitudinally furrowed like the *scriptus*,







LICHEN *Glaucoma*.

Wall-eyed Lichen.

CRYPTOGAMIA *Algæ*.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, cracked, uneven, hard, greyish-white. Shields depressed, crowded; at length tumid, deformed, black, brown or buff, with a strong glaucous tinge, and a wavy border from the crust.

SYN. Lichen *Glaucoma*. *Ach. Prod.* 56.

L. rupicola. *Linn. Mant.* 132? *Huds.* 525. *With.* v. 4. 13? *Lighf.* 806. *Dicks. H. Sicc. fasc.* 15. 22. ,

L. varians. *Davies Tr. of L. Soc.* v. 2. 284. t. 28. f. 3. *With.* v. 4. 18.

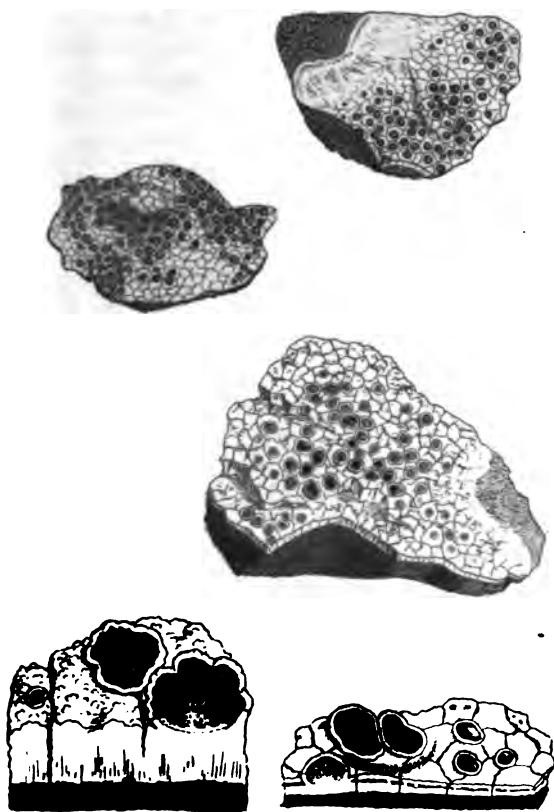
L. compositus. *With.* v. 4. 13. t. 31. f. 2, bad.

Patellaria Glaucoma. *Hoffm. Pl. Lich.* v. 3. 9. t. 52, 53.

Parmelia Glaucoma. *Ach. Meth.* 160. *Winch* v. 2. 50.

FREQUENT on whin-stone, or slate, in mountainous countries. The very hard, continued, distinctly bordered crust follows all the inequalities of the stone, and is itself uneven, cracked, tartareous, of a dirty greyish white externally; pure white within. The shields are extremely remarkable, and account for all the different descriptions and paradoxical relations to be found under the above references. When young they are level with the crust, scarcely bordered; when older tumid, unequal, crowded, with a border from the substance of the crust more or less elevated. The disk is either blackish, lead-coloured, of a horny brown, or a brightish buff, in different shields or parts of shields, but always, unless rubbed, clothed with a fine glaucous powder or efflorescence. In some cases it appears compound or proliferous. Our synonyms, except where a mark of doubt is subjoined, are founded on original specimens. *L. rupicola* of Linnæus cannot be ascertained; we therefore prefer the excellent name of Acharius. We cannot assent to the opinion of some of our learned friends that *L. sulphureus*, t. 1186, or *crenulatus*, t. 930, or *Swartzii* of Acharius, are not perfectly distinct from this, nor do we found our opinion on trivial observation.

2156.



From a collection by Mr. J. S. Sowerby, London.



LICHEN abietinus.

Pine-bark Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust spreading, very thin, smooth, even, pale glaucous. Shields sessile, flattish, black clothed with grey powder; their margin black.

SYN. Lichen abietinus. *Ach. Prod.* 57. *Stockh. Trans.* for 1795. 139. t. 5. f. 7.

Lecidea abietina. *Ach. Meth.* 54.

THIS grows on the bark of different species of Fir, sometimes on the dead wood. It has been found in the north by Mr. Dickson and Rev. Mr. Harriman, and in Suffolk by the Rev. Mr. Leathes. Our British specimens agree with those sent by Dr. Acharius, who alone has described this species of Lichen.

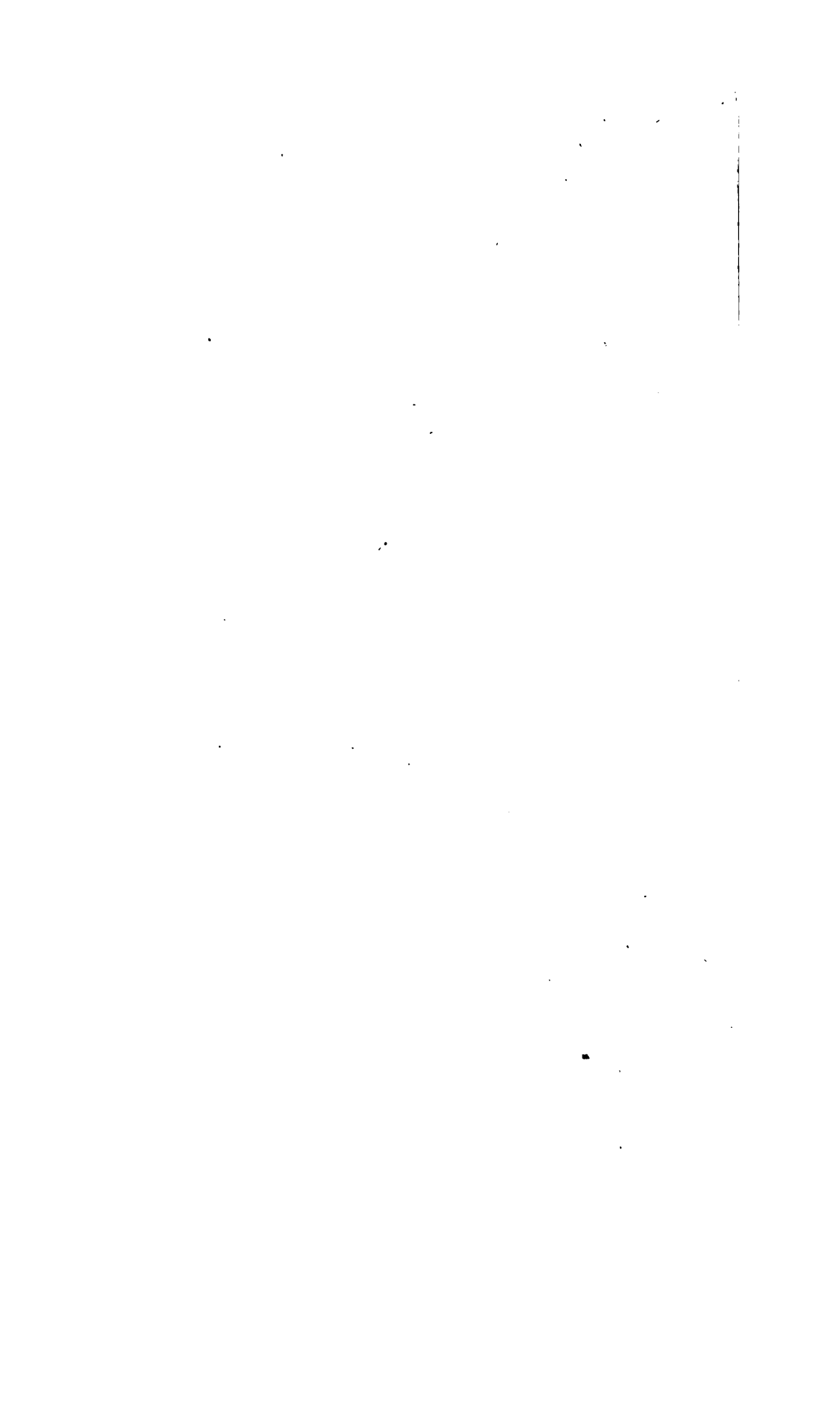
The crust is extremely thin and uniform, spreading indeminately over the wood and inseparable from it, of a very pale greenish grey, smooth, or slightly powdery, in which last case it is whiter. Shields scattered, sessile, black; when young minute, but perfectly formed, with a flat disk, which in time rises somewhat in the centre. The disk is more or less clothed with a fine grey mealiness, which easily rubs off, and leaves the disk black. The border is elevated, uniform in breadth, rounded, black, at length flexuose, and in some measure crenate.

1682



Described & Published by, Jas. Sowerby, London





[1892]

LICHEN corticola.

*Black and white Bark Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust spreading, cracked, mealy and very white. Shields somewhat sunk, small, crowded, grey; at length black, convex, with a very black border.

SYN. Lichen corticola. *Ach. Prod.* 57.L. albo-ater. *Ehrh. Crypt.* 176.L. amylaceus. *ibid.* 303.Lecidea corticola. *Ach. Meth.* 53. *Winch Guide*, 35.Verrucaria albo-atra. *Hoffm. Pl. Lich. v. 1.* 76. *t.* 15. *f.* 2.

I FIRST observed this species on some old trees in Mr. Kett's grounds at Seething, Norfolk. Mr. Sowerby has received specimens from Mr. James Turner, Mr. W. Borrer and the late Mr. Brunton.

It always grows, as the name implies, upon bark, and that of old rugged oaks more especially. The chief difficulty lies in distinguishing it from *L. epipolius*, *t.* 1137, which grows on old walls, and whose crust is more tartareous and grey. The crust of the present plant is white, thin and mealy, sometimes indeed rugged or tumid, but not so tartareous. The shields are partly sunk in the crust, flattish when young, and clothed with a blue mealiness, except their border which is always blackish. In time the disk grows convex, and both that and the border are intensely black, by which last character the species is certainly known. We have compared authentic specimens, of this and the *epipolius*, with numerous ones of British growth.



1892



Specimen published by Dr. J. Sowerby, L. in 1892.



LICHEN *epipolius*.

Silver-grey Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust white, tessellated as if somewhat imbricated. Shields uniform, round, convex, blackish, clothed with fine grey mealiness, and bordered with white.

SYN. Lichen *epipolius*. *Achar. Prod.* 58.

OBSERVED by Mr. Turner growing on calcareous stones in several old buildings in Norfolk and Suffolk. This specimen came from the church of Market Dereham. We know of no other botanist who has found this Lichen in Britain, nor has it been noticed by any writer except Dr. Acharius. Although fine specimens of it are not always to be found, and therefore it may be overlooked, it is a perfectly distinct species.

The crust, when not impeded, spreads circularly, and is of a fine tartareous texture though thin, pure white within, externally when moist faintly tinged with grey; it is finely cracked or tessellated, and towards the margin a little lobed, but scarcely imbricated or rugose. Shields numerous, sessile, small, uniform, exactly round, convex, clothed with a silvery-grey mealiness, which is with difficulty rubbed off, and leaves the shield almost black. When young each shield has a narrow white border.





LICHEN sulphureus.

Sulphureous Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thick, cracked, rugged, dull sulphur-coloured. Shields convex, blackish, mealy, with a paler margin.

SYN. Lichen sulphureus. *Achar. Prod.* 58. *Dicks. Crypt. fasc.* 2. 17. *With. v.* 4. 12. *Hull.* 286. *Relh.* 453. *Abbot.* 259.

Verrucaria sulphurea. *Hoffm. Pl. Lich. v.* 1. 56. *t.* 11. *f.* 3.

IT is scarcely credible that this Lichen should have been considered as a variety of the *sanguinarius*, yet such was actually the case, till Professor Hoffman described it by the apt name of *sulphureus*. Leers guessed it to be the *calcareus* of Linnæus, an error as remarkable as the other.

It is often found on brick walls in open situations, and not unfrequently on rocks near the sea. The crust is thick, very rugged, uneven, and cracked, but not mealy, externally of a dull or greenish sulphur-colour, spreading circularly, with a flat border, which becomes rugged and plaited by age. Internally the crust is whitish and chalky. The shields are numerous, clustered, variously shaped, convex, their border immersed in the crust and scarcely distinguishable from it; their disk blackish, covered with a fine mealiness which easily rubs off, as in *L. impolitus* and many others.

When growing on wood the crust is thinner and more inclined to be mealy, and the shields paler, of a yellowish waxy brown.



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30.
[1864]

LICHEN speireus.
Veiled Black-shielded Lichen.

CRYPTOGAMIA *Algae.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, uninterrupted, slightly tessellated, very white. Young shields sessile, flat, covered with a grey bloom; old ones elevated, convex, very black, with a white border.

SYN. Lichen speireus. *Ach. Prod.* 59.

Lecidea speirea. *Ach. Meth.* 52.

Patellaria calcarea. *Hoffm. Pl. Lich. v. 3. 5. t. 56. f. 2.*

FOUND by Mr. W. Borrer, clothing flinty pebbles on the summits of the cliffs by the sea near Newhaven, Sussex. Acharius mentions it as a maritime Lichen. We know not of its being observed by any other British botanist, but doubtless it may have been overlooked for *L. ater*, or taken for *L. calcarea*, an obscure species, to which almost every black and white one has been, at some time or other, referred. Our specimens accord with those sent by Professor Acharius.

The crust is very white and chalky, spreading in uninterrupted roundish patches, with a thin white edge, not marked by any evident concentric lines. Its surface slightly tessellated when old, rugged, not mealy. Shields numerous, small; when young sunk in the crust, flat, and veiled, as it were, with a grey bloom; when old they are raised almost upon a footstalk, becoming convex, roughish, coal-black, with a thin depressed border of the substance of the crust. Hoffmann's excellent figure and description leave no doubt on our minds as to his synonym.

1864



Murch. & Co. Published by J. C. Smith, London.



[1850]

LICHEN pericleus.
Rough Black-shielded Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust diffuse, thin, leprous, very white. Shields convex, very black, roughish, with a white, crenate, at length powdery, border.

SYN. Lichen pericleus. *Ach. Prod.* 78.

L. abietinus. *Ehrh. Crypt.* 166.

Parmelia periclea. *Ach. Meth.* 156.

FOUND by Mr. W. Borrer at Hurst-pierpoint, Sussex, and by the Rev. G. R. Leathes at Livermere near Bury. It grows sometimes on old posts or pales, sometimes on the bark of firs, as in specimens from Acharius, Swartz and Ehrhart, all which we have diligently compared, and have therefore presumed to make a correction with regard to the latter.

We further presume that this is a very distinct and well-determined species, admirably defined by the eminent writer first mentioned. The crust is very thin, spreading irregularly without any well-marked border, pure white, not tartareous nor powdery. We do not find upon ours those brownish-green parasitical tufts mentioned in the *Methodus Lichenum*, and which are visible on all our foreign specimens. The shields are, in our English specimens, scarcely larger than those of the *exiguis*; but they are peculiarly black, convex, and distinguished by being roughish, though they do not stain the finger like those of *L. inquinans*, t. 810. Their border is very white, crenate, becoming powdery by age, and, as it were, mouldering away into the circumjacent crust.

1850.



Published by J. S. Lowry, London.



✓





[1923]

LICHEN argenus.
Silvery Leprous Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust leprous, powdery, silvery-white.

Shields pale grey, flat, with a tumid white margin.

SYN. Lichen argenus. *Ach. Prod.* 8.

L. farinosus. *Hoffm. Enum.* 8. t. 1. f. 1.

Lecidea argena. *Ach. Meth.* 74.

Verrucaria farinosa. *Hoffm. Germ.* t. 2. 171.

FOUND on the rugged barks of old trees by Mr. W. Borrer, whose specimens accord exactly with the authentic one sent by Professor Acharius. It is very remarkable that the latter abounds with shields, overlooked by our learned friend who sent it, and which prove the plant a *Parmelia* according to his system, not a *Lecidea* as he made it on Hoffmann's authority.

No English writer has hitherto noticed this species. Its crust forms broadish, rugged, mealy patches, of a greyish or silvery white, with an edge fibrous at first, then smooth, even, and greenish or olive-coloured. Shields scattered, sessile or somewhat immersed, small; their disk flat, pale grey or lead-coloured; their border tumid, even or slightly rugged, of the hue and substance of the crust.



2

LICHEN pruinusos.

Frosty-shielded Lichen.

CRYPTOGAMIA Algae.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust leprous, thin, scattered, greyish-white. Shields slightly convex, irregularly shaped, rusty-black, with a grey bloom when dry, and a thin, black, smooth border.

SYN. Lichen pruinusos. *Ach. Prod.* 77.

L. pruinatus. *Dicks. Crypt. fasc.* 3. 15. t. 9. f. 4.

With. v. 4. 20. *Hull.* 290.

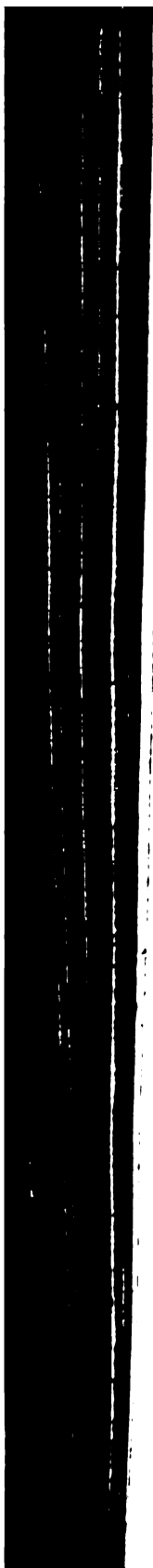
Lecidea pruinosa. *Ach. Meth.* 55. *Winch.* v. 2. 35.

GATHERED on a limestone wall near Gainford, Durham, by the Rev. Mr. Harriman, and communicated to us by Mr. Winch, who justly observes that the "crust is white or ash-coloured," not reddish nor rusty, except probably from the action of some animal matter falling upon it. The substance is very thin, leprous and dispersed, inseparable from the stone. Shields variously scattered, often clustered, sessile, rather depressed, various in size and shape; their disk somewhat convex; when wet of a rusty brown, redder within; when dry black, with a peculiar grey bloom, like that of a plum. Their border is thin, smooth, entire and black. It is a rare species, not generally known to botanists, either in this country or abroad.

2244



published by J. S. Sowerby, London.



J

[1734]

LICHEN dendriticus.

Mocha-bordered Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust greyish-black, thin, circular, with a fine, radiating, compound, inky border. Shields sessile, flattish, coal-black, with a thick elevated margin of their own substance and colour.

SYN. Lichen dendriticus. *Ach. Prod.* 77. *Dicks. Crypt. fasc.* 4. 21.*Lecidea dendritica. Ach. Meth.* 44.*Verrucaria dendritica. Hoffm. Pl. Lich. v.* 1. 90. *t.* 19. *f.* 4.

NOTHING can be more common than this Lichen on flint or quartz pebbles in exposed situations, as well on heaths in Norfolk as on the mountains of Scotland; yet it passed long undetermined, and has been taken sometimes for the Linnæan *fusco-ater*, sometimes for *sanguinarius*. The first British botanist who paid any proper attention to it was the late Rev. Dr. Walker of Edinburgh, who, when I showed him a specimen from the Pentland hills in 1782, told me he had named it *quartzæus*. Either this or our *tuberculosis*, *t.* 1733, (I speak from memory,) is extremely fine on the large masses of white quartz which crown the summit of Ben Lomond, and other Highland mountains.

The specific name given by Hoffmann and Acharius, being extremely apt, in allusion to the tree-like appearance in Mocha stones, we adopt it, as very descriptive of this species, the margin of whose crust is an elaborate compound blueish-black fringe of the most exquisitely fibrous structure. The rest of the crust is greyish, in some degree tessellated, thin, hard and smooth, occasionally almost white. The shields are sessile, of the darkest possible black both in their disk and border, yet somewhat shining; flat when young, rather convex when old: sometimes, though rarely, they are ranged in a concentric manner like those of *L. concentricus*, *t.* 246.

1734



See also published by J. P. Sowerby London.





35
[1733]

LICHEN tuberculosus.
Warted Fibrous-edged Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust greenish-grey, formed of globular granulations, with a radiated, marginal fringe. Shields sessile, flattish, glaucous-black, with a thick, elevated, smooth margin, of the substance of the crust.

ABOUT as common on the South-Downs of Sussex as our *Lichen fibrosus*, t. 1732, according to the observations of Mr. W. Borrer, from whom alone we have received it.

The crust runs over the smooth surfaces of flints, and is in itself extremely thin, of a greenish grey hue, terminating in a more or less distinct, fibrous radiating border. But the whole surface of this crust is nearly covered with small, round, hard, paler granulations or warts, close, but not very much crowded, as the darker basis of the crust is every where visible between them. Such of these warts as are more marginal, and of recent date, are perfectly globular, and prettily scattered over the fibres of the border. Internally they are all white. Among the older warts, but not proceeding from them, grow several scattered sessile shields, larger than the warts, whose disk is concave when young, nearly flat when old, blackish with a glaucous tinge; their margin elevated, thick, smooth, though rather irregular, of the same substance and colour as the warts.

In the system of Professor Acharius this would come into the genus *Parmelia*.—From an imperfect specimen on quartz sent by him we think he may have confounded this species with his *Lecidea dendritica*, which could happen only from his never having seen the shields.





LICHEN conspurcatus.

Dusty Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thick, greyish-white, cracked, rugose, at length mealy; very white within. Shields numerous, scattered, minute; at first prominent and pale brown; then concave and black.

MR. D. TURNER first detected this Lichen on the old Roman walls of Burgh castle in Suffolk, afterwards at Scole inn, Norfolk, and other places. We have observed the free-stone church of Cawston in the same county in many parts entirely encrusted with it, particularly the elegant carving at the west end. It seems always to choose calcareous stones, whether of a finer or coarser texture. We have not been able to refer it to any species in the work of Acharius, though we are not without a suspicion of its being his *L. calcarius*, a conjecture we may hereafter be able to confirm or disprove, but in the mean while we would not withhold a plant so totally new to British botanists.

The crust spreads widely, and in moist weather may easily be detached from the stone; it is from half a line to nearly 2 lines in thickness, extremely white and chalky within, splitting perpendicularly, so as to look fibrous. The surface is greyish-white, very rugged and unequal, cracked into small irregular portions, warty and powdery with age, so as to assume a dirty or dusty aspect, to which the innumerable young shields of various sizes, sprinkled over the crust, like grains of clear brownish sand, also contribute. The shields when at maturity are still very small, in a great measure immersed in the crust, totally black, concave, with an entire elevated edge.

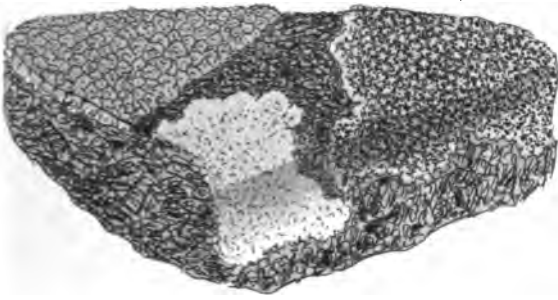


Fig. 1. Section of the rock in the fossil bed.



2

1000

1000



[1954]

LICHEN diacapsis.

*Two-fold-shielded Tartareous Lichen.**CRYPTOGAMIA Algae.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

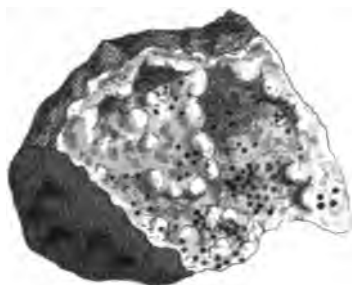
SPEC. CHAR. Crust blueish-white, tartareous, its surface composed of minute undulations. Shields clustered, somewhat sunk; their disk flat, black or brown; their margin thick, externally black, its edge whitish.

SYN. *Parmelia diacapsis*. Ach. Mss. *Winch Guide*, v. 2. 51.

COMMUNICATED to us from Yew How, a hill at the head of Coniston water, Lancashire, by S. Hailstone, Esq. Mr. Turner, on the authority of an original specimen, assures us it is the above plant of Mr. Winch, found in Durham by the Rev. Mr. Harriman, and sent to Professor Acharius, to whom it proved new, and from whom it received the specific name. We presume however, with Mr. Hailstone, that it belongs to the genus *Lecidea*, not *Parmelia*, of the learned author last mentioned.

Our specimen conforms to all the inequalities of a soft brown stone on which it grew, the crust being uninterrupted, half a line thick, tartareous, white or greenish within; its surface white inclining to greyish or blueish, smooth, not mealy, but all over most curiously and minutely wrinkled, plaited, or tuberculated, so as in many parts to represent the entangled imbricated conformation of *L. incurvus*, t. 1375, but remotely, and far less remarkably than *L. circinatus*, t. 1941, imitates an imbricated *Lichen*. This undulated surface however, well defined "*gyroso-verrucosa*" by Acharius, seems to us a clear characteristic of the species. The shields are small, sessile or rather sunk, clustered; their disk flat, sometimes black, sometimes red-brown; their margin very thick and tumid, externally black or greyish, its inner edge undulated, grey or white. There is certainly no accessory margin from the substance of the crust itself.

1954



Translated, Published by J. S. Lowndes, London.

LICHEN *teffellatus*.

Mosaic Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which seeds are imbedded.

SPEC. CHAR. Crust gray, cracked, whitish about the tubercles, which are immersed, black, prominent, smooth.

THIS Lichen, for which we can meet with no synonyms, was discovered by Mr. Dawson Turner upon brick walls about Yarmouth. It covers the surface of the bricks with a gray crust, scarcely mealy, but full of minute angular uneven cracks. The tubercles are numerous, very prominent, pointed, and smooth, particularly black in the centre, destitute of any margin, immersed in the crust, and each always occupying a considerable angular portion of it, which is whiter, both within and without, than the rest of the crust. Sometimes these portions crowd one another into tolerably regular hexagons. When the older tubercles are cut across or rubbed down to the brick, it is found that the crust has been elevated along with their central part, as in *L. sanguinarius*, *tab. 155*.





LICHEN *concinus*.

Concinus Lichen.

CITRINISMA *Aga.*

Gay. CELL. Male. Immersed with.

Female. Immersed shields or tubercles in which the
fruits are imbedded.

Sord. CELL. Crust grey, cracked. Shields black,
dark with an elevated white, mealy margin,
when young almost dark over the centre.

FOR this new Lichen found frequently on brick walls about
Yarmouth, we are likewise indebted to Mr. D. Turner. Its
crust is not much unlike that of the preceding, but more ob-
solute, and not so white. The shields are small, very flat, not
at all immersed, of a bluish unpolished black. Their margin
is considerably elevated, white, very mealy or downy. When
young it is chiefly downy or purled up it is as to cover the black
part, in which time the fructification has the form of minute
white downy specks.

What purposes these apparently inconsiderable productions
answer in the all-wise economy of the creation we cannot
always determine; but we know enough to be certain that
each species is propagated and preserved by the same laws as
the most splendid offspring of a tropical climate, and we may
be as certain that nothing is made in vain. Minute caterpillars
feed upon some of these Lichens, as the *Phalena Lichenella*,
and probably more inconspicuous ones which have not yet
been investigated. We know of one end which they all an-
swer in decay, the formation of vegetable mould, which being
washed into the crevices of the stones it is formed upon,
serves to receive and nourish the seeds of other vegetables.



Section of coral, showing the internal structure.





LICHEN simplex.

Simple Black Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust-olive, thin, smooth, scattered, soon disappearing. Shields scattered or crowded, olive-black; with a thick, elevated, blackish border, at length rugged and contorted.

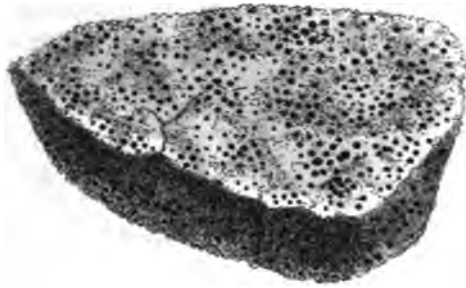
SYN. Lichen simplex. *Davies Tr. of Linn. Soc.* v. 2. 283. t. 28. f. 2. *Ach. Prod.* 78. *With.* v. 4. 5. *Hull.* 285.

Lecidea privigna. *Ach. Meth.* 49. *Winch* v. 2. 34.

FOUND either on slate or on sandstone in various mountainous parts of Britain. The crust is thin, smooth, dark olive, soon breaking into small fragments and scaling off, except round the fructification, where, for a time at least, it remains. The shields are numerous, scattered or clustered as it may happen, small, sessile but prominent, of a dark-brownish black; the disk palest, generally concave but sometimes prominent; the border elevated, thick, blacker than any other part, at first even, but soon becoming wrinkled and deformed, and in a more advanced state, as Mr. Davies described it, the shields are altogether black.

We have drawn one of his original specimens on blue slate, and one of Mr. Harriman's from Durham on white sandstone. Our worthy friend is not responsible for what others may have taken for his plant, nor for their erroneous opinions concerning it. Prof. Acharius, in a letter to us, rightly proposes to remove this species from his *Lecidea* to *Parmelia*. We trust it cannot in future be misunderstood, nor is there any real approach in its shields to those proper to a *Gyrophora*.

2152.



May 1, 1901 published by J. S. Lowrey, London

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[1964]

LICHEN confluens.
Confluent-shielded Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust somewhat uneven, tessellated, of a smoky white. Shields sessile, black, with a black border; at length convex, confluent and angular.

SYN. Lichen confluens. *Weber Goett.* 180. t. 2. *Ach. Prod.* 60. *Dicks. Crypt. fasc.* 1. 9. *With.* v. 4. 8. *Hull.* 286.

Lecidea confluens. *Ach. Meth.* 40.

Verrucaria confluens. *Hoffm. Pl. Lich.* t. 19. f. 1.

β. Lichen pilularis. *Davies in Tr. of L. Soc.* v. 2. 283. t. 28. f. 1.

I GATHERED this first, about 1782, on rocks on the Pentland hills near Edinburgh, in some of those hours of relaxation, so agreeably employed in botanical rambles, with a numerous train of college friends, then ardent and curious like myself. Of these more than half have sunk into an early grave, and even now, as I write, the most valuable of them all is just prematurely cut off from an unspotted and most extensively useful life*. How truly are we "sojourners here, as all our fathers were!"

This *Lichen* being shown to Mr. Dickson was pronounced by him the *confluens* of Weber, which he had already found in England. It grows on schistose or other rocks, and may easily be pared off in large pieces when moist. The crust is tar:areous, soft and friable when dry, white within, its surface of a grey or smoky hue, tessellated, uneven, but not granulated, each little portion being rather concave; at least if not very old. Shields black, closely sessile, more or less clustered, at first flat and greyish, with an elevated, smooth, black border; afterwards they grow convex, and by mutual pressure angular, being often so crowded together, as for 4 or 5 of them to make one aggregate tessellated shield. In the variety *β* they are almost globose, but less aggregate.

* Richard Lubbock, M. D., died at Norwich, Sept. 2, 1808, aged 48.

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LICHEN contiguus.

Glaucous crowded-shielded Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

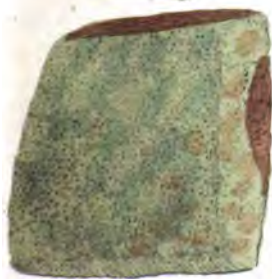
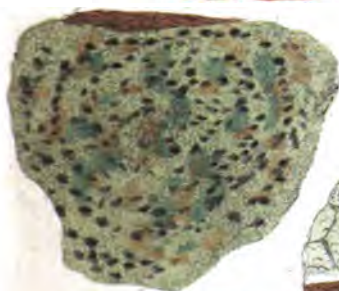
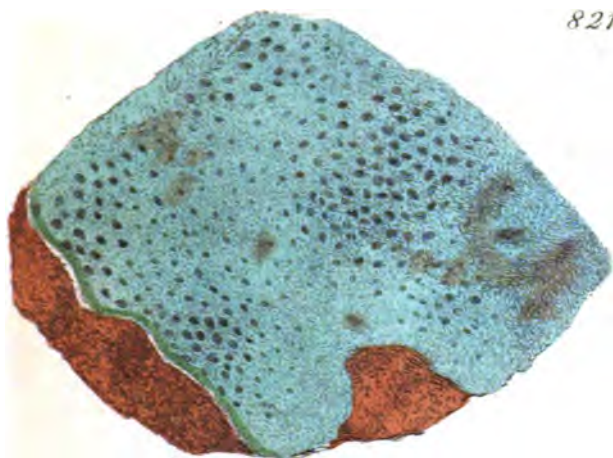
SPEC. CHAR. Crust glaucous-white, tessellated and granulated. Shields clustered, depressed, flattish, angular, black, with a narrow, black, elevated margin.

SYN. *Verrucaria contigua*. Hoffm. *Fl. Germ. v. 2.* 184.

FOUND by Mr. D. Turner on old brick walls about Yarmouth, and by Mr. Sowerby in similar situations at Kennington, Surrey. Specimens from Germany show it to be the *Verrucaria contigua* of Professor Hoffmann, which Dr. Acharius in his *Prodromus* combines with our *L. concentricus* t. 246, and Hoffmann's *V. cicatricosa*, *pantherina* and *tigrina*, under one species called by him *lapicida*. To this union we can by no means assent. *L. concentricus* appears to us perfectly distinct from *contiguus*, not only in the concentric arrangement of its shields, but in their regularly smaller size, concave figure, and thicker whitish margin, as well as in the purer white of the crust. Of this *V. pantherina* and *tigrina* appear from the figures, *Pl. Lichensæ* t. 57, to be varieties. *V. cicatricosa* seems to be given by Hoffmann himself as a mere variety of that now before us.

This has been observed with us upon bricks only, which it clothes in large patches of a greenish or glaucous-white tartareous crust, cracked or tessellated all over, and a little granulated; at the edge sometimes blackish, sometimes feathery, but these circumstances are far from general. The shields are numerous, more or less crowded or clustered together (as they advance in age) into patches or lines, and thus rendering one another very angular. Their disk is depressed, at length a little convex and rugged, black, surrounded by a sharp thin elevated margin. The crust is sometimes red within.

L. confluens is nearly allied to this, but its blue or blackish gray crust and more prominent shields seem to keep it distinct.



Dec. 1, 1800. Published by J. J. Jewerby, London.

LICHEN concentricus.

Concentric Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crustaceous, whitish. Shields black, confluent, in concentric circles, imbedded in the crust.

SYN. Lichen concentricus. *Davies, Tr. of Linn. Soc.* v. 2. 284.L. petræus. *Jacq. Coll. v. 3. 116. t. 6. f. 2, a. a. a.*

FOUND on rocks of whin-stone in the parish of Whitford, Flintshire, by the Rev. Mr. Hugh Davies, F. L. S. The crust is somewhat mealy, very thin, of a greyish white. The shields scarcely rise above its level, and are remarkable for being arranged in concentric lines, sometimes forming several very regular circles, one within another, with a few dispersed shields between. The shields are small, black, opaque, concave, with a margin generally white, particularly in the young ones. Their outline is seldom quite circular, especially as they are most crowded together in lines, so as to force one another into an angular shape, and to become in a manner confluent.

That this is the plant of Wulfen, published by Jacquin in his *Collectanea* above quoted, there can be no doubt, as the description and figures exactly agree with ours. With respect to the synonyms, which made Mr. Davies uncertain about it, they are unquestionably wrong, as the synonyms of Wulfen (otherwise an excellent botanist) too often are. The name *concentricus* is so very apt and so strikingly characteristic, we could not hesitate about preferring it to the unmeaning one of *petræus*.



LICHEN rimosus.
Cracked Chalky Lichen.

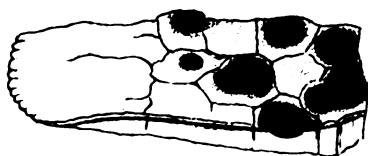
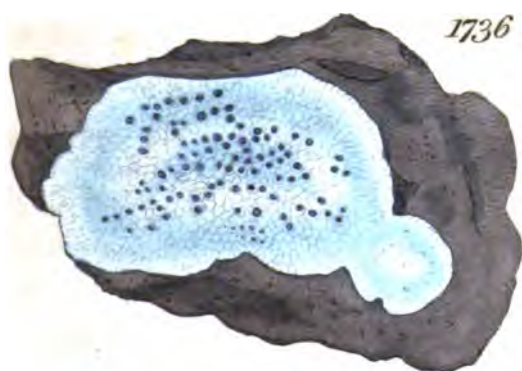
CRYPTOGAMIA Algæ.

- GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.
- SPEC. CHAR. Crust circular, white, chalky, cracked, crenate. Shields depressed, black; their margin whitish stained with grey.
- SYN. Lichen rimosus. *Ach. Prod.* 62. *Retz. Fl. Scand. ed.* 2. 275. *Dicks. Crypt. fasc.* 1. 12. *With. v.* 4. 25. *Hull.* 292.
L. Fl. Dan. t. 468. *f.* 3.
Parmelia glaucoma β . *Ach. Meth.* 161.
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OUR specimens of this Lichen were collected by the Rev. J. Holme, F.L.S., on the top of Heartside Fell between Penrith and Alston, Cumberland, where it is very conspicuous on the blue limestone rocks. We have also received it from the Rev. H. Davies, and have seen it in various places, always on calcareous stones.

Its crust is generally circular, of a very white chalky appearance, somewhat elevated in the centre, though not thick; the surface full of angular cracks, though less so than many others; and the extreme edge crenate. The shields are numerous in the central part, not near the edge, irregularly disposed, depressed, scarcely projecting above the level of the crust; their disk flat, opaque, black, having a glaucous-grey tinge when young; their border apparently of the substance of the disk rather than of the crust, yet it is whitish, being only stained, as it were, with grey, which colour is often extended to the crust immediately surrounding each shield.

We are always loth to dissent from Dr. Acharius, whose deep knowledge and candid love of truth render his authority of the greatest weight, but we must consider this Lichen as distinct from his *glaucoma* (the *varians* of Mr. Davies, *Tr. of L. Soc. v.* 2. *t.* 28), nor are we certain that they belong to the same genus in his system.



May 1. 1860. Published by J. S. Searcy, London.

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[1737]

LICHEN rivulosus.
Branching-lined Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

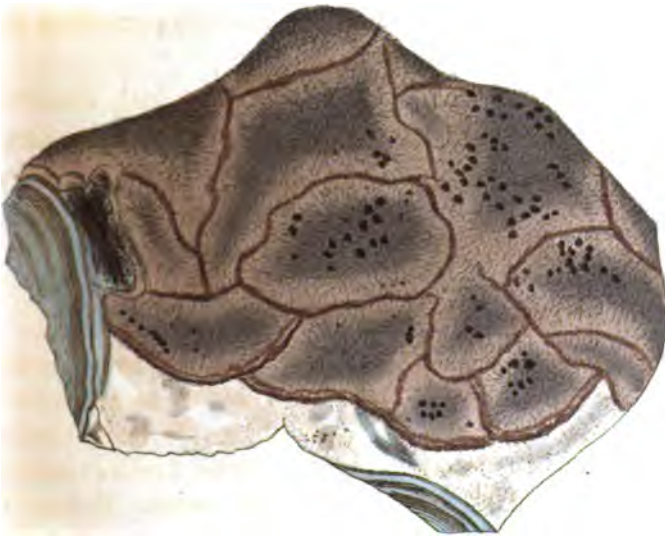
SPEC. CHAR. Crust brownish grey, cracked, bordered and intersected by dark serpentine branching lines. Shields scattered, sessile, black, flat, with a wavy margin of their own substance, but somewhat paler.

SYN. *Lecidea rivulosa*. Ach. Meth. 38.

IT seems strange that a Lichen so frequent as this is in rocky countries should not have been described by British writers. Our specimens from Mr. W. Borrer and Rev. H. Davies exactly accord with what Dr. Acharius sends for his *Lecidea rivulosa*, as well as with his description of that species. Perhaps it may be the *fusco-ater* of our authors, a Lichen for which any thing of a blackish or brownish cast has been occasionally exhibited.

The common crust is generally compounded of several different individuals crowded into one, and their black undulating edges joined together make several branching lines, but this character is not by any means confined to the present species. Its surface is hard, minutely cracked and tessellated, of a smoky grey, the inside white, of no considerable substance. Shields scattered, sessile, not immersed nor depressed, rather small, coal-black and flattish in the disk, their border elevated, wavy, seldom quite so black as the disk, sometimes much paler and brownish. A crop of small young shields is always interspersed among the larger ones.

1737



Myr. 1267. Published by J. J. Sowerby, London.

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LICHEN escharoides.

Coralline-crusted Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, brownish ash-coloured, composed of granulated warts. Tubercles convex, irregular, black, with an obsolete black border.

SYN. Lichen escharoides. *Ehrh. Crypt.* 313. *Achar. Prod.* 77.

L. miscellus. *Achar. Prod.* 62.

Lecidea miscella. *Achar. Meth.* 39.

THIS new addition to our list of British Lichens was discovered by Mr. D. Turner in his tour to Cornwall in 1799, and near Yarmouth in June last. It grows either on turfy ground or on rocks. Original specimens prove it the real plant of Ehrhart, and consequently of Acharius, who in his first work, not having seen Ehrhart's specimens, mistook his own *L. miscellus* for a different species.

The crust is from a quarter to half an inch in thickness, composed of tartareous granulations, ash-coloured or brownish, various in size and shape, but externally rounded or tumid, with a whitish appearance. Tubercles imbedded among the warts, sessile, quite black, convex, with a scarcely perceptible margin of the same colour.

Some affinity is observable between this species and *L. cæruleo-nigricans*, v. 16. t. 1139.

We have a vague recollection of having seen this *L. escharoides* in some English collections, taken for the *atro-albus*, to which it has little affinity except in colour.

[illegible]

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[1831]

LICHEN miscellus.
Rough Tartar-crusted Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust continued, tartareous, cracked, tumid, uneven and granulated, pale brownish grey. Shields in the interstices, crowded, flattish, black; at length convex, with a very thin black border.

SYN. Lichen miscellus. *Ach. Prod.* 62.

Lecidea miscella. *Ach. Meth.* 39.

FOUND by the Rev. Mr. Harriman on whin-stone rocks near Winch bridge, also in the neighbourhood of Whey-syke, the milky rivulet, in Teesdale forest, Durham. His specimens have been sent to Dr. Acharius, and determined as above; therefore these synonyms must be removed from our *L. escharoides*, t. 1247, which is a very different plant, whatever the *escharoides* of Ehrhart may be. His original specimen is a poor one, but we hesitate to reduce it to the plant before us,

L. miscellus forms large, uninterrupted, but irregularly shaped, patches, of a thickish tartareous substance, their surface very irregularly swelled and cracked, of a pale brownish grey, scarcely glossy, but not powdery, each fragment very convex, and minutely granulated or wrinkled. Shields sunk between the fragments of the crust, often crowded or aggregate, deep black but somewhat polished, at first flat or hollowish, then irregularly convex, with a scarcely perceptible, and extremely narrow, black, wavy edge.

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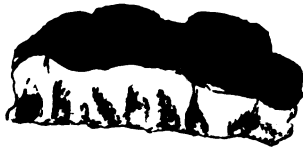
1829



Des. etc., Published by J. A. Smith, London

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1830



Dec. 1. 1830. Publish'd by Jas. Sowerby, London

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(Not now published by J. E. Sponby London.)

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2317



Specimen published by J. K. - 1911

[1877]

LICHEN citrinellus.
Lemon-peel-crusted Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust leprous, granulated, friable, lemon-coloured. Tubercles black, globose, solitary or aggregate.

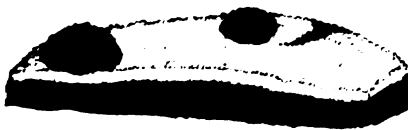
SYN. Lichen citrinellus. *Ach. Prod.* 64. *Act. Holm. ann.* 1795. 135. t. 5. f. 5.

L. flavo-virescens. *Dicks. Crypt. fasc.* 3. 13. t. 8. f. 9.

Lecidea citrinella. *Ach. Meth.* 47.

ORIGINALLY discovered by Mr. Dickson, growing on the ground in sandy places. The crust is well described by Acharius in the *Stockholm Transactions* for 1795, as thick, and rather deeply rooted in the earth, friable, spreading irregularly, unequal, of the vivid greenish-yellow hue of a scarcely ripe lemon, and composed of smooth round granulations, intermixed with some powdery particles. It is nearly of the same hue within. The tubercles are extremely black; when separate, as Acharius describes them in the work just quoted, they are small and not very evident, but in our specimens they mostly form clusters, each resembling one tolerably large shield, and making a rugged mass, often broken by intervening particles of the crust.

1877



Apr. 1868. Published by J. S. Sowerby, London.

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[1878]

LICHEN scabrosus.
Rugged-shielded Sulphur Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

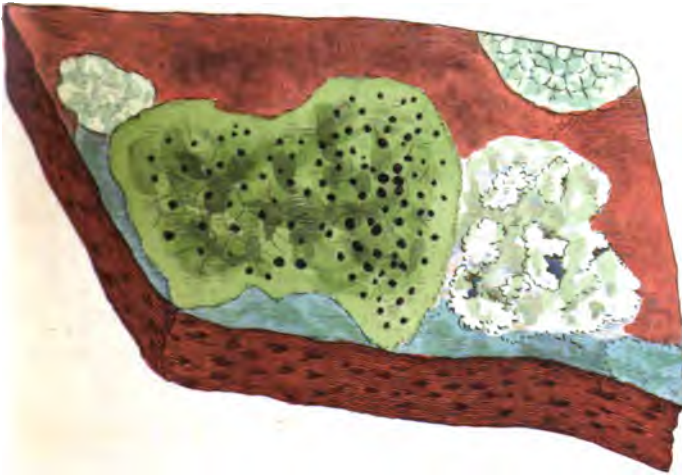
SPEC. CHAR. Crust powdery, pale yellowish green. Shields sunk in the crust, aggregate, black, with an elevated black border.

SYN. *Lecidea scabrosa.* *Ach. Meth.* 48.

FOUND by Mr. W. Borrer on tiled roofs in Sussex, and on flints scattered over the downs of that county, not uncommon.

A considerable affinity, and yet many precise marks of difference, exist between this and the foregoing. The crust of *L. scabrosus* is thinner, paler, more greenish, and truly powdery, by no means granulated. The shields are sunk in its substance so as to be level with its surface, very black, with a thick border of the same substance and colour. Their disk is slightly concave, by age sometimes convex. When the shields happen to be solitary and simple, they are very small, but they are usually aggregate or compound, and in that case each group looks like one irregular shield, with a wavy border, running in concentric lines or plaits over the disk.

1878



Apr. 1. 1878. Published by the University of California.

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[1450]

LICHEN parasemus.
Common Black-shielded Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thin, greyish, uninterrupted, somewhat granulated, black-edged. Shields sessile, flat, opaque, black, with a black smooth border: at length convex.

SYN. Lichen parasemus. *Ach. Prod.* 64. *Relh.* 453.

L. sanguinarius. Lightf. 803. *Sibth.* 320. *Hoffm. Enum.* 27. t. 5. f. 3, 4.

Lichenoides leprosum, crusta cinereo-virescente, tuberculis nigerrimis. Dill. Musc. 126. t. 18. f. 3, *Raii Syn.* 71.

Lecidea parasema. Ach. Meth. 35.

ONE of the most common of all Lichens on the smooth bark of trees, closely intermixed with *L. subfuscus* and some other thin-crusted species, from the patches of which it is distinguishable by its greener grey colour, and a thin black line which marks its edge. Hence Scopoli called it *limitatus*, a name which perhaps ought to have been retained. We nevertheless, to avoid controversy and confusion, adopt that of Dr. Acharius, which expresses the vulgarity of the species. Few indeed are more frequent or less attractive.

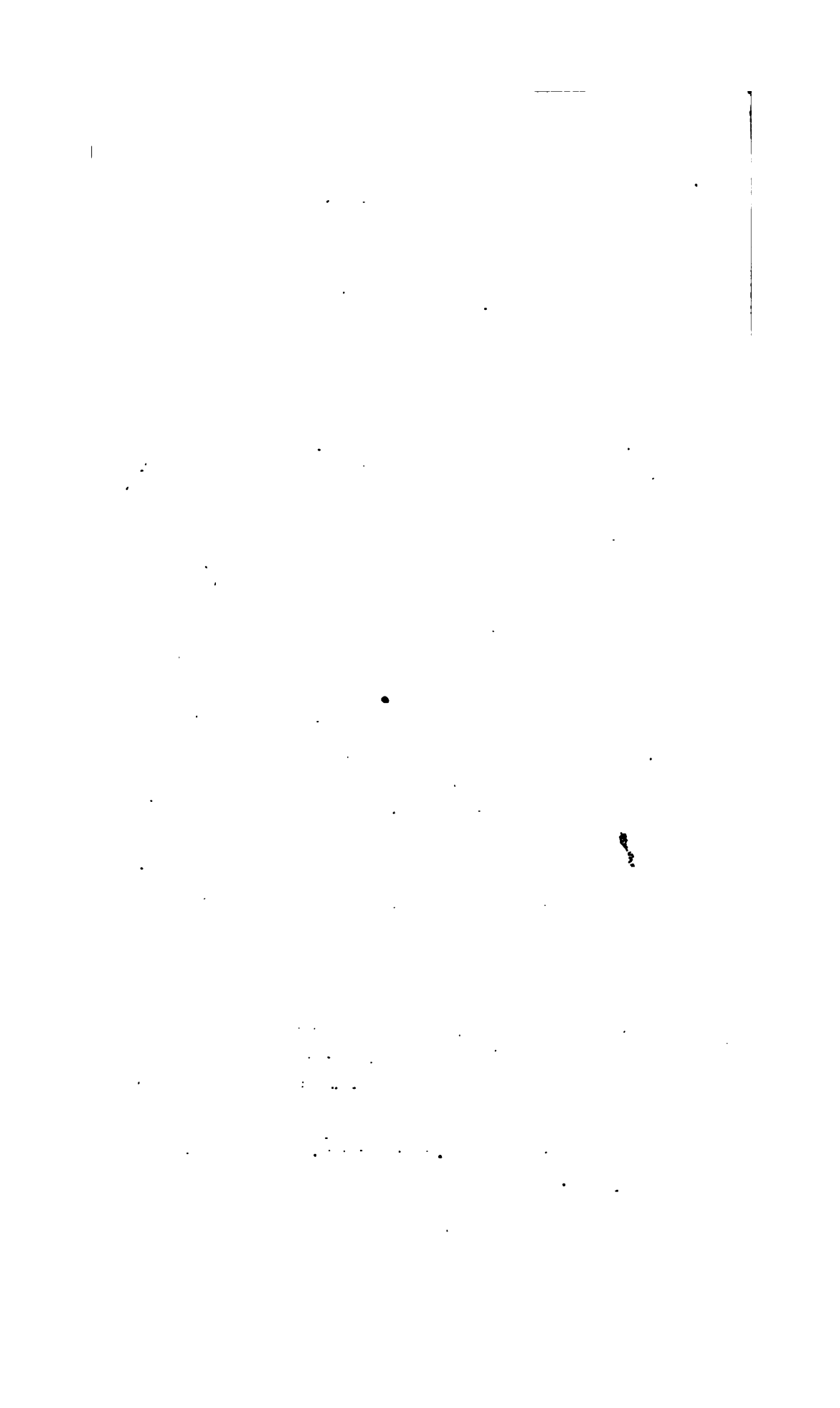
The crust is thin, and inseparable from the bark, slightly rugged and cracked, pale greenish grey with an uneven (generally black) edge. Shields numerous, irregularly crowded, small, sessile, but not at all sunk into the crust, of a deep dull black: when young flat or rather concave, with a smooth black border: when old convex, rugged, without a border. Being formed in winter, and lasting for a year or more, the shields (by the stretching of the bark) are often separated into oblong clusters. They are grey, not red, within.

Most authors have confounded this with *sanguinarius*, see our v. 3. p. 155, where it is alluded to as "growing on smooth young trees."

2450



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L I C H E N muscorum.

Moss Lichen.

C R Y P T O G A M I A *Alga.***GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leprous, granulated, grey. Tubercles black, clustered, elevated; at length turbinated.**SYN.** Lichen muscorum. *Linn. Meth. Musc.* 36. *Witb.* v. 4. 7. *Hull.* 285. *Reichb.* 424. t. 5. *Abbot.* 258. *Dickf. Dr. Pl.* 99.

GATHERED on Gogmagog hills by Mr. Relhan, who first published it as an English plant. Dr. Smith found it about Matlock-bath. Our specimen was sent by Mr. Dawson Turner from Buxton in Norfolk.

This species inhabits damp shady places, and is remarkable for growing upon verdant healthy tufts of mosses, which it clothes, in large patches, with its thin leprous finely granulated grey crust. This crust takes precisely the form of the branches or leaves of the moss underneath, so that the Lichen assumes a branched or leafy appearance. The tubercles are numerous, clustered, elevated by a conical base, quite black when young slightly margined; in an advanced state convex, and turbinate or top-shaped.

It is a very distinct species, and easily known by its place of growth.



Corallium (Solenastrea) sp.

2



LICHEN Lightfootii.

*Lightfootian Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, granulated, greenish, white, black-edged. Shields sunk, flat, polished, black, with a black smooth border: at length convex.

THIS grows on the bark of trees, and has been sent to Mr. Sowerby from Sussex by Mr. W. Borrer, and to Mr. Turner from the north of Ireland by Dr. Scott. A British specimen was given me so long ago as the year 1784, by the late author of the *Flora Scotica*, as a new Liehen, distinct from *sanguinarius* as well as from that in our last plate; and as his opinion seems not ill founded, I am happy to take this opportunity of applying his name to the species.

I am well aware how nearly this is related to the foregoing, and propose it rather for further inquiry than with any great confidence. The crust forms its principal distinction, being tartareous, and very strongly granulated; white within, greenish, not grey, without. The shields are immersed in the crust, and at every period of their growth overtopped by its granulations. They are black, rather shining, not quite opaque, somewhat concave when young, with a very thin smooth black border; when old they become slightly convex and rugged.

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[2547]

LICHEN dubius.

*Doubtful Board Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

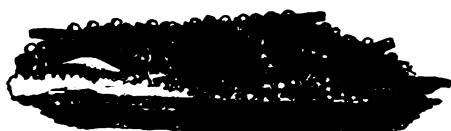
SPEC. CHAR. Crust leprous, pale brownish grey, indeterminate. Tubercles black, convex, slightly immersed in the crust; bordered when young.

SYN. *Lecidea dubia.* *Turn. and Borr. Lich. Brit. Mss.*

COMMON on boarded buildings, though hitherto overlooked and undescribed, unless it may be the *Lecidea aitema* of Acharius's *Lich. Universalis*, of which Mr. Borrer, to whom we are obliged for calling our attention to the plant, has some suspicion. We confess that we have often passed over this minute production, chiefly upon pales or boards of deal, in exposed situations in Norfolk, as well as around London.

The crust consists of minute, but elevated and compound, granulations, forming indeterminate confluent patches, paler and more grey than those of *L. querneus*, t. 485, which this species otherwise most resembles. The minute clustered tubercles however are quite black externally, though brown when scraped or cut, and have when young a very evident raised black border.

2547.



May 1893 published by J. S. Kennedy, London

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LICHEN dolosus.

Rusty Spongy-crusted Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust dispersed, minutely granulated, somewhat fibrous, bibulous, of a tawny olive. Tubercles minute, blackish brown, with a paler border of their own substance; finally convex, and deprived of their border.

SYN. *Lecidea dolosa*. *Ach. Meth. Suppl.* 11.

OBERVED, in great abundance, on a rock called O'Donoghue's prison, at Killarney, by Sir Thomas Gage, who, on comparing his specimens with the collection sent by Acharius to the Linnæan Society, thought himself tolerably sure of the above synonym. The description of that author answers well to our plant, except that his specimens grew on the antient barks of oaks and spruce firs.

The plant before us covers the uneven surface of the grey slate rock, in wide and broken patches, of a tawny olive brown, here and there yellowish, consisting of fine, spongy, seemingly downy, inseparable granulations, instantly imbibing any moisture. In this particular it agrees with our very curious *L. spongiosus*, *t.* 1374; but the fructification is that of an Acharian *Lecidea*, not a *Collema*, and consists of minute sessile tubercles, of a very dark brown when young, with a paler border of their own substance. Their disk, which is at first nearly flat, becomes subsequently more convex, and black, with no remains of the border.

2581



See 2581 published by J. H. Schuchert

7

LICHEN sanguinarius.

*Sanguineous Lichen.*CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crustaceous, white and polished. Tubercles black, destitute of a border, bright red within.

SYN. Lichen sanguinarius. *Linn. Sp. Pl.* 1607. *Huds. Fl. An.* 524.

GATHERED copiously by Dr. Smith on the granite rocks of Cromford Moor near Matlock, though rare elsewhere. We have been very sparing of synonyms to this species, because scarcely any author seems to have understood it. Linnæus confounded together several species of Lichen, under the name of sanguinarius, which in our opinion are distinct, especially one with a thin greyish ground, and marginated tubercles, found on the bark of smooth young trees, and another with a thick greenish crust, found on rocks. In this Messrs. Hudson, Lightfoot, Relhan and Withering follow him without any discrimination. We should dissent from these respectable authorities with great diffidence, if they appeared to have examined the matter at all. What we here offer is the true *L. sanguinarius*, on the authority of the description in *Sp. Pl. ed. 1* and *2*, as well as of the *Linn. Herbarium* (in which there is a specimen of it on the bark of a tree), and may be certainly distinguished by the following marks:—

The crust is white and polished, not mealy, often of a considerable thickness, its surface consisting of minute unequal knobs or *rugæ*, its substance very white internally, though sometimes stained with a most vivid vermilion hue. The tubercles are very various in size, flat, and imbedded at first among the inequalities of the crust, but soon rising above it, and becoming very convex, even globose, without any perceptible border, very black, scarcely shining. If their black surface be pared off, a thicker layer of grey appears, and under that a mixture of white and red, appearing to be the crust of the plant elevated into the centre of the tubercle, and so becoming more constantly (though not infallibly) red than it is of itself in other parts.



7



[1851]

LICHEN pinicola.

Pine-bark Black-shielded Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust diffuse, thin, brownish white, somewhat tartareous. Shields numerous, very minute, very black, opaque, with a black, smooth, elevated border.

SYN. Lichen pinicola. *Ach. Prod.* 66.*Parmelia exigua* β . *Ach. Meth.* 155.

WHEN we venture to dissent from the opinion of so great a practical observer as Professor Acharius, we gladly resign ourselves to his correction in case he should on reconsidering the matter find us in the wrong. In the more intricate departments of botany any aid is welcome; and as our work is become one of the most extensive in the cryptogamic class, we will not withhold any thing which may enrich it, especially as that class has of late acquired so many votaries. The world seems to have discovered that nothing about which Infinite Wisdom has deigned to employ itself, can, properly speaking, be unworthy the attention of any of its creatures, how lofty soever their pursuits and pretensions may be.

I first gathered this *Lichen* in 1791 on the bark of some old firs at Enfield wash, and was persuaded of its being distinct from *parasemus*, t. 1450, the only species with which it still seems to me to have much affinity. I have no doubt that the remark in the *Methodus* of Acharius indicates the true source of his error in referring this species to *exiguus*, from which I have always found it essentially different, (even generically so according to his own principles,) in having a black border only to the shields, of the substance of their disk. Its minuteness distinguishes it from *parasemus*, but especially the thin brownish crust. It is not a rare plant. Mr. W. Borrer has sent a more scaly variety, as he judges, which is frequent on barus.

1851.

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Published by J. S. Lowry, London.

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[1117]

LICHEN Oederi.

*Oederian Lichen.**CRYPTOGAMIA Alga.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thin, tessellated, of a rusty red. Shields minute, somewhat globose, a little imbricated, concave, black, with a thick, black border.

SYN. *Lichen Oederi.* *Achar. Prod.* 66. *Swartz. Act. Up. Sc. v. 4.* 245. *Linn. Fil. Meth. Musc.* 36.

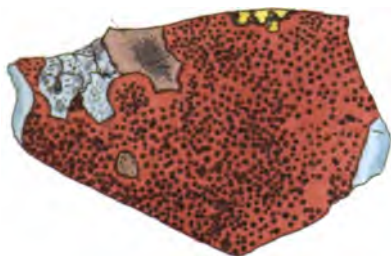
L. caesus. *Dick. Crypt. fusc.* 2. 19. t. 6. f. 6. *Hall.* 290.

L. Dicksoni. *Willd. v. 4.* 20. *Achar. Prod.* 76.

L. leprosus ruber, tuberculis nigris. *Oeder. in Fl. Dan. t.* 470. f. 1.

THIS the real *Lichen Oederi*, being certainly that figured in the *Fl. Danica* was sent us by the Rev. H. Davies from North Wales, growing on slate. I first found it in 1781 on rocks about Edinburgh, when it was supposed to be the *fusco-ater* of authors. Mr. Dickson has since named it *caesus*, and Dr. Withering called it *Dicksoni*. Among so many names we are obliged to follow the Swedish and Danish authorities, as most original and authentic, and we have established our synonyms on original specimens.

Its very thin crust forms spots from half an inch to 2 inches in diameter, and is inseparable from the stone, of an uniform rusty red, tessellated, but not rugged, except when very old. We have in some young specimens perceived a lobed appearance towards the edge. The shields are exceedingly numerous, very thin, and black in the crust, and partly prominent and somewhat globose, entirely black or very slightly glaucous; the margin even, and extremely thick in proportion to the disc, which is concave and depressed. Two or three of the shields are often crowded together in a line or otherwise.—In Dr. Acharius's specimens the crust is more granulated than in ours, which we presume to be the effect of age.



Jan. 71. 1808. Published by J. S. Sowerby, London.

[1118]

L I C H E N filaceus.

Yellow ochrey Lichen,

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust uneven, tessellated, yellowish-red. Shields sessile, black, at length convex; their border acute, black.

SYN. Lichen filaceus. *Achar. Prod.* 66.

L. Oederi. *Web. Spicil.* 182. *Dicks. Crypt. fasc.* 2. 17? *With. v. 4.* 11. *Hull.* 286?

Patellaria filacea. *Hoffm. Pl. Licb. t. 19. f. 2.*

THAT this is what Weber named *L. Oederi* we are certain from German specimens as well as from his description; but, as he erred in supposing it the *Lichen* figured by Oeder, his name must give place to that adopted by Hoffmann and Acharius, two great authorities in this department of botany. That it is Mr. Dickson's *Oederi* we hesitate to pronounce, because the specimen in his *H. Sicc. fasc.* 2. 24. appears to us rather *L. confluens* tinged with an ochrey hue, as mentioned by Dr. Acharius, p. 66, which hue however we believe to be caused by animal matter rather than by iron.

This species is totally distinct from the preceding. Its crust is thicker, more uneven and deeply cracked, of a yellowish buff colour rather than red. The shields are three or four times as large as those of *L. Oederi*, sessile, not immersed; their margin thin and sharp, often waved, their disc broad, and, though flat at first, soon convex, especially in its centre, which is protruded in a mammillary form, simple or divided, and sometimes crowned with a sort of cup or pore. In what respects *L. confluens* differs from this we hope some other time to demonstrate. Both of them grow on mountainous rocks in the north.

448



Jan. 1. 1863. Published by T. A. Sowerby, London.



LICHEN sophodes.
Obscure Black-shielded Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust orbicular, granulated, dull greenish ash-colour. Shields slightly convex, clustered, black, with an elevated, entire border, coloured like the crust.

SYN. Lichen sophodes. *Ach. Prod.* 67.

Parmelia sophodes. *Ach. Meth.* 155.

THAT this little-known Lichen is distinct from *ater*, t. 949, no botanist can scruple to admit, and as such we venture to publish it. Acharius says it is an intermediate species between that and his *exiguus*; but as we find it difficult, even with specimens before us communicated by that learned writer, to settle our opinion of the latter, we leave it in doubt.

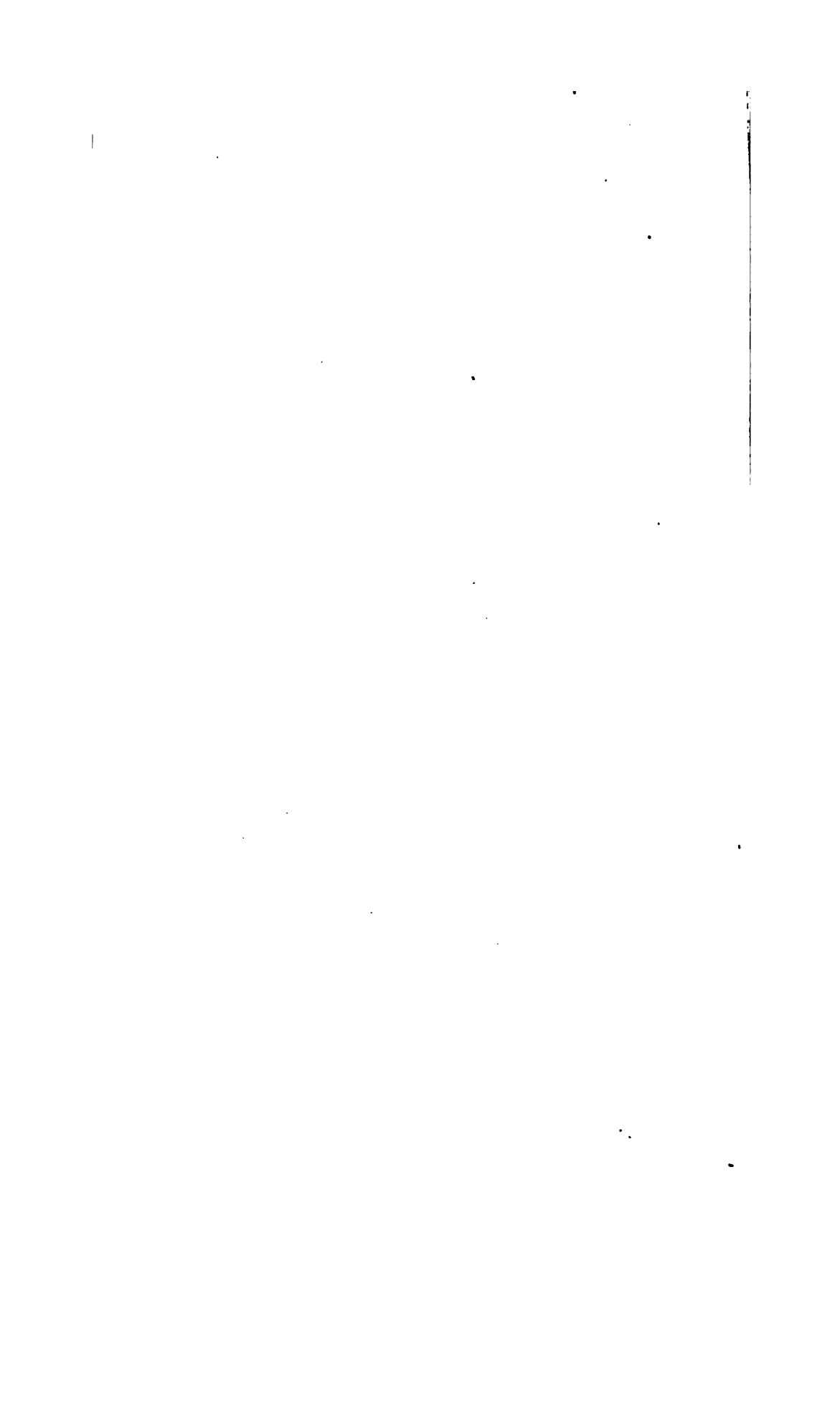
L. sophodes is found by Mr. W. Borrer to be common upon trees in Sussex, and Mr. Turner has also sent it from Yarmouth. The crust when young is circular, consisting of little granulations, which give it an evident substance or thickness. The surface is not at all mealy; its colour an obscure greenish grey, very different from the occasional varieties of colour in that of *L. ater*. Shields numerous, crowded, small, each proceeding from a minute granulation; their disks flattish at first, then convex, of a not very intense black. Border elevated, of the substance and colour of the crust, smooth and entire, except at an advanced age, when it becomes a little wrinkled.

1791



Published by J. G. Sowerby London.

12



[1530]

LICHEN *tigillaris*.*Yellow Rail Lichen.*

*CRYPTOGAMIA Algæ.***GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles in which the seeds are imbedded.

SPEC. CHAR. Crust spreading, cracked, rugged, smooth, yellow, rising into warts which bear the shields. Shields minute, black, flat, with a black border.**SYN.** *Lichen tigillaris.* *Achar. Prod.* 67.*Lecidea tigillaris.* *Achar. Meth.* 46. t. 2. f. 1.

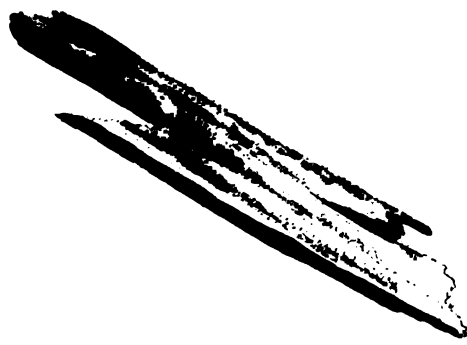
MR. DICKSON first mentioned this to us as a British species. He gathered it on trees in Enfield Chase. Mr. E. Forster communicated the specimen here represented from a barn at Walthamstow. The same is found also on barns, rails, and old paling at Loughton, Essex.

The crust spreads in an indeterminate manner, and in a young state is loosely scattered over the decaying wood. Its colour is a bright conspicuous yellow when dry; greenish occasionally when wet. When perfect the crust is minutely cracked and rugged or warty, yet the surface is smooth, not powdery. Each of the larger and more prominent warts bears on its top a minute sessile black shield, surrounded by a smooth black border.

The minuteness of the shields has, perhaps, caused this Lichen to be overlooked, notwithstanding its striking yellow colour, as something in an imperfect state.

The acuteness and accuracy of Dr. Acharius first determined its characters, nor can any species be more distinct.

25311



Published by J. S. Sowerby, London

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LICHEN ater.
Black-shielded Lichen.

CRYPTOGAMIA *Alge.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust rugged, granulated, white. Shields flattish, coal-black, with an elevated, white, at length zigzag and notched, border.

SYN. Lichen ater. *Huds.* 530. *Lichtf.* 813. *With.* v. 4. 18. *Hull.* 289. *Relb.* 426. *Sibth.* 323. *Abbot.* 261.

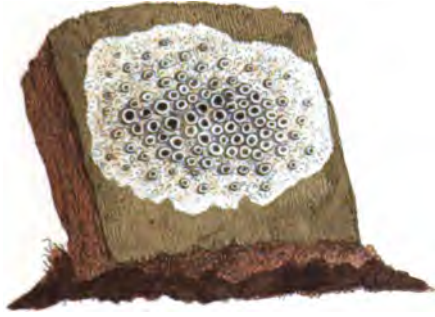
L. tephromelas. *Achar. Prod.* 67.

Lichenoides crustaceum et leprosum, scutellis nigricantibus majoribus et minoribus. *Dill. Musc.* 133. t. 18. f. 15.

THIS Lichen is very common on walls, and even on rocks. It seems to flourish most abundantly on brick buildings in rather exposed situations.

The crust spreads circularly, and is moderately thick, granulated and rugged, sometimes very white, but often a little brownish or greyish, not at all mealy. When dry it is very friable. The shields are extremely numerous, and often crowded together, sessile, various in size. Their disk nearly flat, or rather concave than convex, of a perfect char-coal black in every stage of their growth, by which it is distinguished from all varieties of *L. subsfuscus*, a species we shall take a future opportunity of illustrating. The margin of the shields is conspicuous by its elevation and whiteness, generally speaking, for in some instances it is found tinged with lead-colour, and then the plant becomes *L. cinerascens* of Withering, but has nothing to do with t. 4. f. 3. of Hoffmann's *Enumeratio*. By age this margin grows zigzag and variously notched.

Dillenius thought our *scruposus*, v. 4. t. 266, a variety of this.





[1849]

LICHEN exiguus.

Diminutive Black-shielded Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust orbicular, radiating, thin, leprous, uneven, dull ash-coloured. Shields minute, clustered, flat, black, at length rather convex; their margin white, at length brownish.

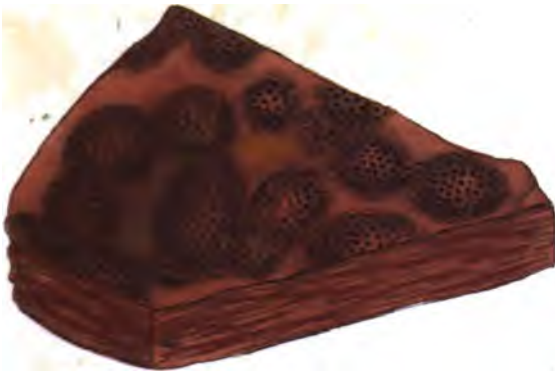
SYN. Lichen exiguus. *Ach. Prod.* 69.Parmelia exigua. *Ach. Meth.* 154.

WE have at *t.* 1791 expressed some doubts about the *L. exiguus* of Acharius, which arose from his specimens; but Mr. W. Borrer having lately sent us from Sussex what appears by comparison the true plant, we shall give all the information in our power concerning it. Mr. Turner finds the same on old pales about Yarmouth.

On old tiles the crust is seen in most perfection, forming small circular patches, very thin, of a dull brownish ash-colour, leprous and uneven, not tartareous, encircled with a fibrous radiating margin unnoticed by Acharius. Shields minute, numerous, crowded, black, flat when young, with a very distinct smooth whitish border. By age the border becomes brown, but we cannot observe that it disappears. The disk grows convex when old.

From the most mature examination of original specimens, it appears evident to us that *L. pyrinus* of Acharius is this very plant, and by no means a variety of *sophodes*, and further, that *L. abietinus* of Ehrhart is the *pericleus*, *t.* 1850. The figure in the Stockholm Transactions for 1795, *t.* 5. *f.* 6, d, e, f, seems rather *sophodes*, *t.* 1791, which is intermixed with Dr. Acharius's own specimens of *exiguus*, and perhaps led him to cite that figure under it.

1849.



Ammonoites

[1466]

LICHEN uliginosus.

Earthy Marsh Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust olive-brown, granulated, gelatinous.

Shields black, flattish, with a black smooth border; at length convex, and clustered.

SYN. Lichen uliginosus. *Schrad. Spicil.* 88. *Ach. Prod.* 69.L. humosus. *Ehrh. Crypt. n.* 135.Lecidea uliginosa. *Ach. Meth.* 43.

FIRST observed by Mr. D. Turner we believe in 1799, on wet sandy heaths near Yarmouth, from whence Mr. Francis Turner has lately favoured us with specimens. We have also received it from Mr. Borrer, who finds it plentifully in Surrey.

It is easily overlooked, being nearly of the colour of the black turfy soil, at least when dry. When moist it becomes of a dull olive or rusty green, covering the earth with its close gelatinous pulpy crust, whose granulated surface is soft and slimy to the touch. Numerous minute blackish shields are scattered over the whole, flat at first with an elevated smooth border of their own colour. In process of time they become larger, more conspicuous, prominent, convex, and clustered together.

1466



June 1866. Published by J. L. Sowerby, London

✓

[193]

LICHEN immerfus,

*Sunk Lichen.**CRYPTOGAMIA Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

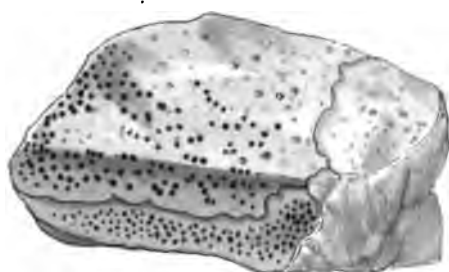
SPEC. CHAR. Shields entirely black, each sunk into a cavity in the hard, whitish, smooth crust, and deciduous.

SYN. Lichen immerfus. *With. Bot. Arr.* 169. *Relb. Cant. Suppl.* 1. 23. *Weber Fl. Goetting.* 188. *Smith's Tour*, v. 1. 171. *Sibth. Oxon.* 318.

FOUND in Derbyshire and other counties at all seasons on calcareous rocks; we have not observed it on any other.

The crust is almost as hard as the stone on which it grows, (though very distinct from it) half a line, or not so much, in thickness, nearly entire in the margin, greenish internally, its surface white, smooth, full of little hemispherical cavities of various sizes and depths, the bottom of each of which is occupied by a black depressed smooth shield, with an entire margin of a more intense black than the disk.

These shields in time fall out, leaving the almost everlasting crust full of cavities, which (if the edge of the specimen be cautiously pared away) may often be found to extend even into the very substance of the stone. See Dr. Smith's Tour above quoted. Micheli mentions, p. 97, several Lichens which bear their shields in cavities; his No. 21 and 22 best agree with ours, but not having seen his specimens we dare not positively quote him. We have not indeed seen Mr. Relhan's nor Dr. Sibthorp's *L. immerfus*, but there can scarcely be any doubt of theirs being the same with ours.



✓

[1541]

LICHEN corallinus.

White Coral-crust Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, whitish, papillary, uneven, orbicular, with a leafy grey margin; internally fibrous and branched. Tubercles minute, brownish, terminating the branches.

SYN. Lichen corallinus. *Linn. Mant.* 131. *Huds.*526. *With. v.* 4. 16. *Hull.* 288. *Lightf.* 808.*Ach. Prod.* 87. *Hoffm. Enum.* 40. *t.* 4. *f.* 2.*Isidium corallinum.* *Ach. Meth.* 138. *t.* 3. *f.* 7.

OUR late worthy friend Mr. Robert Teesdale, F.L.S., gathered this Lichen at Selby, Yorkshire, and favoured us with one of the specimens here delineated. It occurs, not very frequently, on large stones in the mountainous counties. The finest specimen that ever came under our notice grew at Blackford near Edinburgh, and was perfectly circular and entire, near 12 inches in diameter; in the centre about half an inch thick, and growing gradually thinner to the edge, which was bordered by an uninterrupted, rugose, somewhat leafy, margin, of a reddish grey colour. Of this margin, hitherto unnoticed even by the accurate Acharius, we exhibit a portion in the plate. The general texture of the crust is tartareous, when broken found to consist of upright branched fibres, whose tips render the surface rough, as in *L. coccodes*, *t.* 1511; and each of these tips when perfect bears a minute sessile brownish tubercle. The colour of the whole is nearly white, except the tubercles and border. Very white and more finely branched round portions sometimes grow in a parasitical manner out of the main crust, as is well described by Acharius.

1541



LICHEN Westringii.
Speckled Coral-crust Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, brownish, papillary, uneven, orbicular with a thin flat edge; internally somewhat fibrous and branched. Tubercles minute, dark brown, internally red, terminating the branches.

SYN. Lichen Westringii. *Ach. Prod.* 88. t. 2. f. 2.

Isidium Westringii. *Ach. Meth.* 138. *Winch.* v. 2. 47.

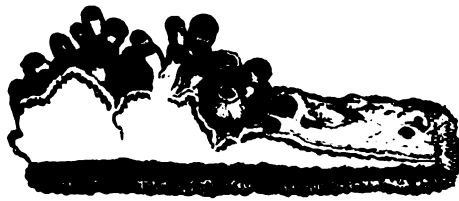
SPECIMENS of this curious Lichen, exhibited in our plate, were gathered on walls in the county of Durham by the Rev. Mr. Harriman, and communicated to us by the Rev. G. R. Leathes. It mostly grows on micaceous rocks, and, as Mr. Turner assures us, has been found in Ireland. Dr. Acharius named this species after his friend Westring, its first discoverer.

It differs from *corallinus*, t. 1541, in being not white, but of a dingy brown, speckled, or scorched, appearance; neither is it so branchy or fibrous internally, being rather solid, with a rugged or plaited surface in many parts, while in others cylindrical knobs rise out of the crust, and in many the latter consists of clustered branches like *corallinus*. The edge is thin, close-pressed, spreading, sometimes limited by a black line. Numerous little round convex tubercles, red or deep dull orange internally, terminate the branches or knobs, and sometimes hardly rise above the crust.

We cannot well satisfy ourselves about the character of the Acharian genus *Isidium*, which describes the disk of the tubercles as a ball bearing seeds on both sides.

We believe Mr. Dickson's *L. punctatus* to be not this, but a nondescript *Lecidea*.

2204



1910, published by J. S. Leach, London

✓



[1511]

LICHEN coccodes.
Granulated Coral-crust Lichen.

CRYPTOGAMIA *Algae.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust leprous, greyish, papillary, cracked, uneven; internally fibrous and branched. Tubercles minute, convex, brownish-grey, terminating the branches.

SYN. Lichen coccodes. *Ach. Prod.* 10.

Isidium coccodes. *Ach. Meth.* 139.

Lepra obscura. *Ehrh. Crypt. n.* 298?

WE gathered this on trees in Westmoreland so long ago as 1783, but did not venture to determine it till specimens from Professor Acharius proved it to be his *Lichen* (now properly *Isidium*) *coccodes*. Mr. D. Turner has found it on the park pales at Flixton, Suffolk. We are not equally sure of the synonym of Ehrhart. At least his specimen, if the same species, is in an earlier or less perfect state than ours.

The crust is uneven, leprous and greyish in appearance, when perfect covered with minute papillary tubercles, and, if we are not deceived, terminated by a smooth leafy darker coloured border like *L. fagineus*. When broken it is found to be a congeries of erect, dense, cylindrical, branched stalks, brittle like a coralline, in which it agrees with *L. corallinus* of Linnæus. The tops of these minute stalks are each tipped with a very small convex tubercle of a brownish-grey, or glaucous hue, which is presumed to be the fructification, but this tribe of Lichens are as yet in great obscurity in that respect.





[1833]

LICHEN oculatus.
Eye-like Coralline Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust indeterminate, continued, white, rugged, warty, bearing upright, clustered, cylindrical, tumid, solid branches. Shields terminal, solitary, flattish, grey.

SYN. *Lichen oculatus.* Dicks. *Crypt. fasc.* 2. 17. t. 6. f. 3. *With. v.* 4. 7. *Hull.* 285.

L. horophthalmus. Ach. *Prod.* 90.

Isidium oculatum. Ach. *Meth.* 140.

OBSERVED first by Mr. Dickson on rocks in Scotland. Our specimens were gathered on Ben Lawers by Mr. Turner and Mr. W. J. Hooker. Acharius seems in doubt respecting this species, and yet it can scarcely have been unseen by him, as we have a fine Lapland specimen from Dr. Swartz connected with his original *L. frigidus*. Can this therefore be the *Isidium dactylinum*? That it is an *Isidium* there can be no doubt; but it shows how truly that genus has the fructification of a *Lichen*.

The crust is very white; smooth and shining in its surface; spongy or fungous within. It runs uninterruptedly over mosses or such small plants, producing numerous swellings and warts, but especially a number of crowded upright cylindrical uneven branches, mostly, but not invariably, simple, fungous within, brittle like a coralline when dry. At the end of each perfect branch is one small solitary horizontal shield, of a much less diameter than the branch, and as it were immersed in its summit, so as to have a border from the branch itself. The disk when young is grey, but at length it seems to become white and rugged, perhaps in consequence of the discharge of the seeds, which are plainly lodged in cells within it when full grown.



Junonia, Junonia, Junonia, Junonia



LICHEN microphyllus.

Small-leaved Cushion Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Slightly imbricated, depressed, fragmentary, on a dense, black, fibrous cushion: its segments grey, lobed, crenate and granulated at the edge. Shields tawny, with a pale smooth border.

SYN. Lichen microphyllus. *Schrad. Spicil.* 97. t. 1. f. 4.

AT length we have the pleasure of clearing up a very obscure and mistaken plant, on the authority of a specimen sent by Dr. Schrader to Mr. Turner, which proves it distinct from *L. carnosus*, t. 1684. We learn from Mr. Borrer that the latter has been repeatedly sent by Swartz and Acharius as *Parmelia hypnorum*: whereas the true *L. hypnorum*, see v. 11. t. 740, is *P. lepidora* of Acharius, as we have discovered some time ago.

This true *L. microphyllus* was gathered by Mr. Borrer and Mr. Hooker on trees at Inverary, and in glen Ach-na-shilloch, Ross-shire; also by Mr. Turner previously at Bodmin and by loch Katherine. Professor Acharius, it seems, aware that this plant is not described in his *Methodus*, means to call it *Lecidea triptophylla*; but we apprehend it is a true *Parmelia*, as well as his *Lecidea pannosa*, to which it is closely allied by its dense cushion of inky-coloured fibres, unaccountably overlooked by Professor Schrader, by which they both approach *P. plumbea*, our *Lichen plumbeus*, t. 353, and our *affinis*, t. 983.

—There is indeed but little of this cushion in the latter. It is altogether wanting in *L. carnosus*, t. 1684.

Young patches of the plant before us are circular, old ones irregular. The fronds, at first crowded, depressed and uneven, separate into scattered fragments, of a greyish hue, smooth above, lobed, rounded, granulated and powdery at the edges, the centre becoming almost shrubby, like some coralline, as happens decidedly in *Lichen pannosus*. Shields unfrequent, central, small, sessile, of a tawny dull orange, with a pale smooth border.

2128.



Mass. 1816. published by J. C. & G. L. & Co.

[1684]

LICHEN carnosus.

Little Fleshy-shielded Lichen.

CRYPTOGAMIA Algæ.**GEN. CHAR.** Male, scattered warts.

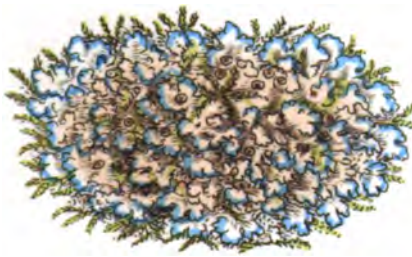
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, flat, light brown, smooth: its segments dilated, rounded, crenate; mealy and blueish at the extremities. Shields prominent, thick, with a flat orange-red disk, and border coloured like the frond.**SYN.** Lichen carnosus. *Dicks. Crypt fasc. 2. 21. t. 6. f. 7. With. v. 4. 33. Hull. 293.**L. microphyllus. Schrad. Spicil. 97. t. 1. f. 4.*

THIS pretty Lichen seems very little known. Mr. Dickson first found it on rocks in the mountainous part of Scotland. Our specimens were gathered in North Wales by J. W. Griffith, Esq., who sent others to Dr. Withering. Mr. Turner, on whose authority we depend for the synonym of Schrader, justly observes that the *L. microphyllus* of Acharius is not this, but our *L. escharoides*, v. 18. t. 1247.

The fronds spread horizontally over mosses, forming small irregular patches, attached by minute radicles. The segments are flat, sometimes ascending, oblong, wavy, smooth, somewhat imbricated, repeatedly subdivided, dilated, rounded and crenate towards the extremity; their colour is a light brown, very pale on the under side; the edges are tinged with blue, and slightly powdery; the inner substance of the frond is also blue or greenish. Shields solitary or clustered, small, prominent, with a flat orange-red disk, and a smooth slightly elevated border, of the colour and substance of the crust.—In natural affinity this species comes among the first *Imbricariæ* of Acharius's *Prodromus*, and according to his more recent arrangement is a *Parmelia*,

168.1



Described. Published by J. S. Smith, London.

LICHEN plumbeus.
Lead-coloured spongy Lichen.

CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated. Segments lobed, obtuse, greyish; clothed underneath with very thick, blueish, spongy down. Shields small, flat, rusty-coloured; their margins entire.

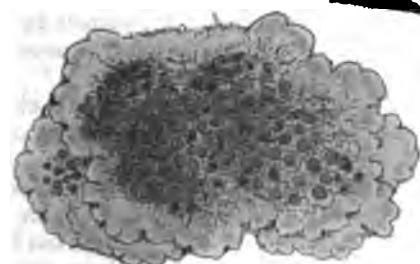
SYN. *Lichen plumbeus.* *Lightf. Scot.* 826. t. 26. f. 2.
With. Bot. Arr. v. 3. 187.

L. caerulescens. *Huds. Fl. An.* 531. *Dicks. H. Sicc. fasc.* 10, 24.

Lichenoides tenue et molle, Agarici facie. *Dill. Musc.* 179. t. 24. f. 73.

BROUGHT from Cardiganshire last summer by Dr. Smith. It grows on trunks of trees, in the mountainous counties of Great Britain, not unfrequently.

The fronds are remarkably thick and cork-like, elevated from the bark on which they grow by a dense spongy coat of blue or lead-coloured down, that is often prominent and visible beyond the margin of the leaf, which seems to be forced up by it. The whole plant has very much the texture of *Boletus versicolor*, as Dillenius well observed; though, not having seen it recent, his description and figure are far from excellent. Mr. Lightfoot's are much better. The upper surface is smooth, but not shining, often longitudinally wrinkled. The shields are very numerous, scattered over the disk of the frond, and often clustered and confluent, of a small size, flat, reddish-brown or rusty-coloured, with an entire margin nearly of the same colour. Specimens which bear no shields are frequently nearly covered with grey granulations or warts, which have been presumed to be the male flowers, and are what Hedwig takes for such. We are inclined to suspect them to be rather analogous to *gemmae*, or the bulbs of *Lilium bulbiferum*, *Dentaria bulbifera*, &c. and that (as in those) the plant which bears them has a less tendency to bear flowers or seeds; though these warts do also occur on the shield-bearing fronds. We have never, however, traced them to young plants.





LICHEN affinis.

Thinner spongy Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, depressed; segments bluntly lobed and notched, greyish, smooth, concave, white-edged; clothed beneath with dark blueish dense fibres. Shields rusty-coloured, with whitish, elevated, crenate margins.

SYN. Lichen affinis. *Dickf. Crypt. fasc. 4. 24. t. 12. f. 6.*

WE have long known this Lichen (which is found on the trunks of trees in mountainous woods) as a most distinct species, though confounded with *plumbeus*, v. 5. t. 353, by all authors except Mr. Dickson. It grows with *plumbeus*, but is more rare, and has a great affinity to Dr. Swartz's tropical *L. pannosus*.

The fronds spread circularly, and, though imbricated, are flat, and but little elevated in any part above the bark or decayed moss on which they grow. Their numerous segments are smooth, grey, concave, blunt, with a silvery-white edge, and clothed beneath with an uniform woolly coat of tangled blueish-black fibres, akin to the spongy under side of *L. plumbeus*, but by no means equal to it in thickness; neither are these fibres so dense, woolly, or prominent as in *L. pannosus*. The central part of the plant is often powdery. The shields are numerous, larger than those of *plumbeus*, of a reddish chestnut, and rendered conspicuous by their elevated, crenate, inflexed border, of the same polished whitish or silvery grey as the edges of the frond.



Fig. 1. A cluster of small, circular, pitted structures.

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LICHEN Hookeri.

Hookerian Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, depressed; segments bluntly lobed and notched, radiant, somewhat striated, silver-grey; black and naked beneath. Shields black, with elevated, crenate, grey margins.

DISCOVERED upon the micaceous rocks of Ben Lawers and Mael Greadha in the Highlands by Mr. W. Borrer, who has named it after our mutual friend Mr. W. Jackson Hooker, kindly allowing us to participate in the pleasure of paying so just a tribute to his knowledge and liberality.

This very elegant species does not agree with any specimens received from the learned Swedish botanists, either by Mr. Borrer or ourselves. It seems most allied to *L. affinis*, t. 983, or some of that tribe. The fronds consist of small, silver-grey, imbricated, slightly elevated, oblong portions or leaflets, whose disk is obscurely striated; their margins tumid, crenate, paler; their extremities dilated and radiant, especially such as form the circumference of the crust. The shields are abundant, a little raised, of a moderate size, black, opaque, scarcely concave or convex, with a prominent, crenate, inflexed border, of the substance and pale whitish hue of the crenatures of the fronds.

2241



May, 1881, collected by J. H. Kewley, London.

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[1161]

LICHEN niger.

*Inky Lichen.**CRYPTOGAMIA Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust of a sooty black, composed of very minute, imbricated, lobed and cut leaflets; the margin blueish. Shields scattered, small, black; at first bordered and concave; at length convex.

SYN. Lichen niger. *Huds.* 524. *Linn. Suppl.* 449. *Achar. Prod.* 92. *With. v.* 4. 10. *Hull.* 286. *Sibth.* 319.

MR. HUDSON first noticed this Lichen in Britain, and mentions the neighbourhood of St. Ives, Cornwall, as its particular place of growth. We found it 20 years ago about Kirkby Lonsdale, Westmoreland, growing plentifully upon moist shady rocks. Mr. Harriman has sent very fine specimens from the county of Durham, and Mr. Griffith others from Wales. It prefers calcareous rocks.

The crust is very black, looking like stains of ink upon the stone, the edge being grey or blueish. It is thin and tender, with difficulty to be pared off entire, even in moist weather, being composed of innumerable minute leaves or branches, finely cut and palmate, quickly imbibing moisture and so becoming gelatinous. In an old dry state they assume a pale or greyish hue. The shields are small, scattered, black, opaque; when young slightly concave, with a smooth border of their own colour; but by age they grow convex and lose their border. This species is very distinct in colour from *L. microphyllus* of Acharius, *carnosus* of Dickson, as well as much smaller in all its parts.

Mr. Griffith (see Withering) conceives it to be transformed by age into *L. plumbeus*, *v.* 5. *t.* 353; but as such a metamorphosis would overset all ideas of specific distinction in Natural History, we conceive the appearance of it to have been caused by seeds of the *plumbeus* vegetating in a bed of decayed *L. niger*.



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LICHEN hypnorum.

*Straggling Lichen.**CRYPTOGAMIA Alga.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust green, granulated. Shields flat, reddish brown, with an inflexed, pale, lobed border.

SYN. Lichen hypnorum. *Fl. Dan.* t. 956. *Dicks. Crypt. fasc.* 3. 14. *With.* v. 4. 22. *Hull.* 290.
Verrucaria granulosa. *Hoffm. Pl. Lich.* t. 30. f. 3.

MR. DICKSON first made this known as a British species. It grows upon mosses, sometimes on the ground, in barren sandy places. We have received it from Dr. Babington of Ludlow, and from Mr. D. Turner. It does not seem to be confined to any particular country. Its crust is visible enough in the form of greyish green globules or scales, spreading irregularly over mosses, or dead grasses, and bearing small straggling shields, whose disk is flat or convex, of a pale chestnut brown, surrounded by a lobed incurved border, which when young is somewhat granulated and of the colour of the crust, but by age it becomes of a pale brown, more cracked and less granulated. In this state the shields might be taken for old ones of the *L. marmoreus*, did not an investigation of both plants in their various stages of growth render it impossible to confound them.

We quote Hoffmann on the authority of Dickson and Ehrhart; for his figure represents the shields in so advanced a state, we should hardly have recognized them.

740



LICHEN *cæruleo-nigricans*.*Black and Blue Lichen.*

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust of irregular, imbricated, tumid, powdery, greyish leaves. Shields black, irregular, flattish, in the interstices of the leaves, with a thick palish border.

SYN. Lichen *cæruleo-nigricans*. *Lightf.* 805. *Huds.* 652. *Witb. v.* 4. 10. *Hull.* 286. *Abbot.* 259. *Dickf. H. Sicc. fasc.* 8. 24.

L. veficularis. *Achar. Prod.* 94. *Relb.* 458.

L. paradoxus. *Ebrb. Crypt.* 206.

Patellaria veficularis. *Hoffm. Pl. Lich. t.* 32. *f.* 3.

IN the last page we mentioned the opinion of Dr. Acharius that this and *L. candidus* are not distinct species. With all due deference to such authority, we cannot but conceive them different. *L. cæruleo-nigricans* grows on the ground, not on stones, and consists of long branched tufted spongy roots, bearing tumid roundish clustered leaves, greenish when wet, grey or brown when dry, covered with fine mealy powder. We do not find that they turn black when old. Black shields grow among them, greyish when young, and surrounded with a thick paler border, which disappears as they advance in age, and they then become various in size and form, often tumid, but more generally flat. Such are the characters of this plant as we have found them in Cambridgeshire specimens sent by the Rev. Mr. Hemsted, as well as in others from the north; yet so various are the accounts and sentiments of authors about it that we offer ours with great diffidence. We retain Lightfoot's specific name as original and indisputable, though he has misquoted Dillenius. Surely Mr. Bolton's *Sphæria glauca* cannot be the same with what we have here described.

Professor Hoffmann has figured and illustrated these two Lichens in the most admirable manner.



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1



LICHEN candidus.

White Tumid Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust white, lobed and swollen, minutely cracked and powdery. Shields black, convex, irregular, in the clefts of the crust.

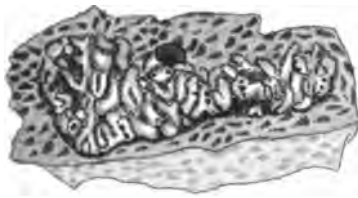
SYN. Lichen candidus. *Weber. Goett. 193. Ebrh. Crypt. 49.*

L. tumidulus. Sm. Transf. of Linn. Soc. v. 1. 82. t. 4. f. 3.

Patellaria candida. Hoffm. Pl. Lich. t. 33. f. 2.

FOR this Lichen, not before detected in Britain, we are also obliged to Mr. Turner, who found it on the ruined walls of Trigby church near Yarmouth. It is preserved in the late Mr. Bryant's herbarium, now in the possession of Miss Hancock of Norwich, by the name of *atro-albus*, with the Linnean definition of which it somewhat agrees. Having met with this species in the South of France, and conceiving it to be nondescript, I called it *tumidulus*, a name perhaps more expressive than that of Weber, but his has a prior right. Surely Dr. Acharius is much mistaken in considering it a variety or early state of *cæruleo-nigricans*!

The crust is tartareous, swelling out into remarkably thick prominent lobes, clothed with fine white meal, which when rubbed off leaves the crust brownish or grey, and minutely cracked. Within it is however pure white. The shields stand in the interstices of the crust, sessile, various in size and figure, at length convex, sinuated and lobed, coal-black with a narrow edge of the same colour. In a young state they are clothed with blue mealiness.



2

1

[1777]

LICHEN aromaticus.

Aromatic Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust strongly rooted, indeterminate, of irregular, minute, crowded, smooth, greyish white portions. Shields in the interstices, black, round, concave, with a thick black border.

SYN. *Lecidea aromatica*. *Turn. MSS.*

OBSERVED on old flint walls, especially where there is a stratum of earth or moss, by Mr. Turner and Mr. W. Borrer, to whom we are entirely indebted for a knowledge of this curious species, which having been sent to Professor Acharius, is allowed by him to be perfectly distinct from all hitherto described.

Its most striking peculiarity is the powerful and highly fragrant scent which this Lichen gives out, in a recent or moist state more especially, when rubbed or bruised. In habit and structure it so nearly resembles *L. cæruleo-nigricans*, t. 1139, that their specific differences can hardly be defined, both being strongly rooted, consisting of crowded or imbricated angular portions, and bearing black concave or flat shields. But *L. aromaticus* is scarcely one fourth so large as the *cæruleo-nigricans*, and the fragments of its crust are less lobed and tumid, of a browner or whiter hue, yet not powdery. The roots, and habit of the crust, distinguish it from *L. atro-albus*, without adverting to the scent.

v





[1329]

LICHEN luridus.

*Lurid Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust of roundish, imbricated, lobed, greenish-brown leaves, pale beneath. Shields black, slightly bordered, at length becoming convex tubercles.

SYN. Lichen luridus. *Achar. Prod.* 95. *Dicks. Crypt. fasc.* 2, 20. *With. v.* 4, 28. *Hull.* 293. *Schrad. Spic.* 92.

L. pulmonarius saxatilis viridis, foliis vix conspicuis squamatis sibi incumbentibus, receptaculis florum nigris. *Mich. Gen.* 101. *t.* 54. *ord.* 36. *f.* 4. *Dill. Musc.* 228. *t.* 30. *f.* 134.

Lecidea lurida. *Ach. Meth.* 77.

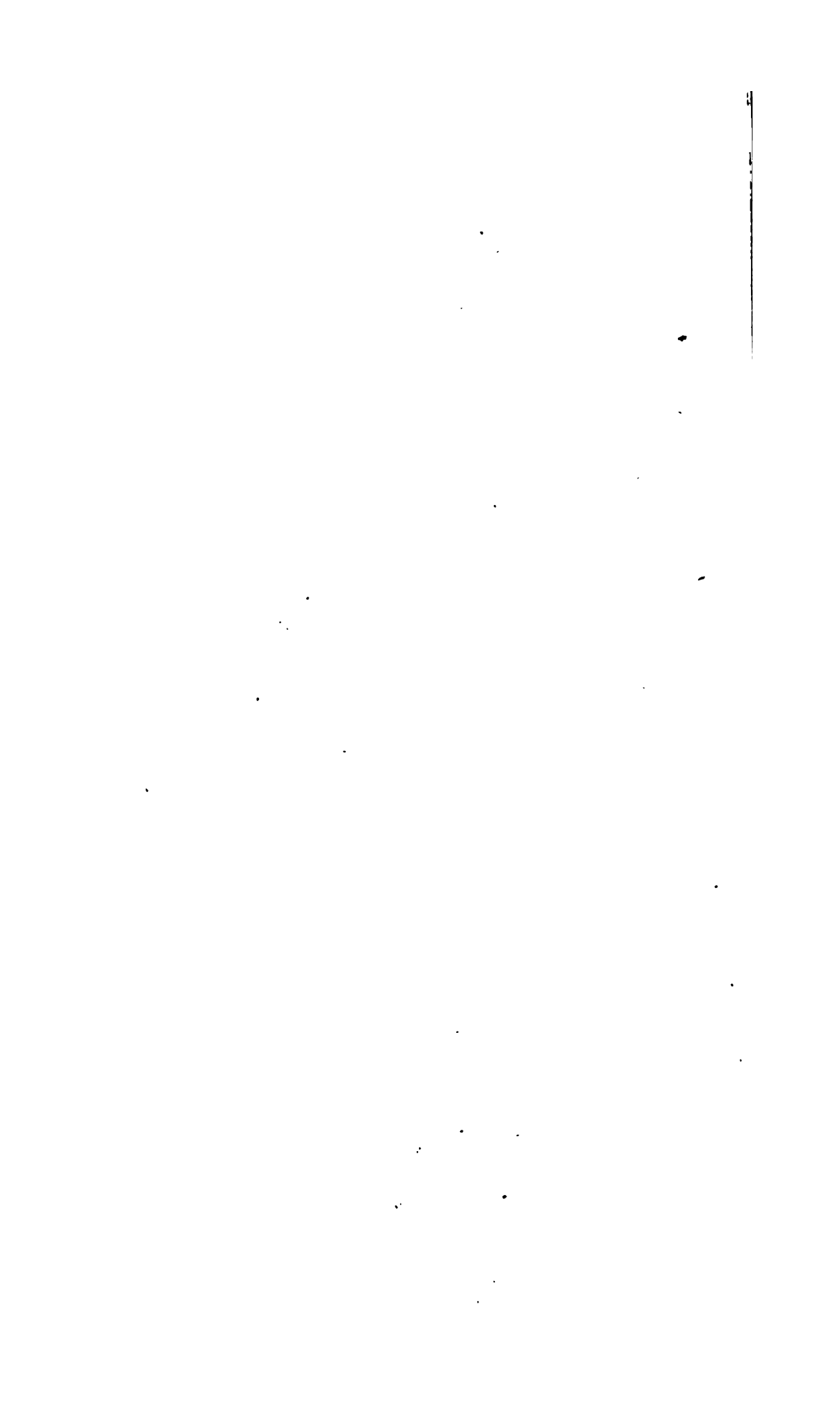
FOR fine specimens of this we are obliged to the Rev. Mr. Harriman, who found them about Eggleston, Durham. The thick, small, imbricated, blunt-lobed leaves form a sort of crust, on the loose earth in rocky shady places, to which they are attached by white fibrous roots. They are smooth, of a dull brown, various in darkness, and generally tinged with green. Their edges and under side are paler; their inner substance very white. The shields are very black, sessile, at first flat with a black border, but they become at length convex, and the border is obliterated. It is related to *L. cæruleo-nigricans*, *t.* 1139, but distinct.

We cannot help agreeing with Dillenius, Schrader and Acharius, that Mr. Dickson's *L. squamatus*, *Crypt. fasc.* 2. 20. *H. Sicc. fasc.* 3. 25. *Dill. t.* 30. *f.* 135, is not specifically distinct from the above.

2020



July 1 1880 Published by J. S. Gower & Co. London.



[2011]

LICHEN squamulosus.

Scaly-crusted Lichen.

CRYPTOGAMIA Algae.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust imbricated, cracked, smooth, brownish ash-colour; its fragments angular and somewhat lobed. Shields sunk; at length elevated, flatish, of a brownish shining black, with a border like the crust.

SYN. Lichen squamulosus. *Ach. Prodr.* 230. *Schrad. Journ.* for 1801. 75.

L. piceus. *Dicks. Crypt. fasc.* 4. 22. *t.* 12. *f.* 5.

Parmelia squamulosa. *Ach. Meth.* 181. *Winch Guide*, v. 2. 53.

Lecidea? *picea.* *Ach. Meth.* 51.

COMMUNICATED from the county of Durham by the Rev. Mr. Harriman to Mr. Borrer, and observed also by the gentleman last named and Mr. Hooker about Loch Carron, and other parts of the highlands of Scotland. Mr. Dickson indeed first found this Lichen in Scotland, and determined its distinctive characters with his usual penetration, though foreign writers have not ascertained his synonym.

The crust spreads closely over rocks and stones, and is calcareous and white within, though externally of a tolerably uniform brownish or smoky ash-colour. Its surface consists of prominent lobed imbricated fragments, approaching to the appearance of a minutely imbricated Lichen, without any precise border, and often cracks into separate dispersed fragments. Shields numerous, small; when young sunk and concave; afterwards raised, with a flat or uneven disk, of a polished pitchy black, here and there brownish and semipellucid, and with a wavy border of the colour and substance of the crust.



Nov. 1809. Published by J. Sowerby, London.



[1102]

LICHEN atro-rufus.

*Red-brown Lichen.**CRYPTOGAMIA Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust lobed, angular, smooth, of a whitish brown. Shields sessile, flattish, dark red brown with a blackish narrow border ; at length confluent.

SYN. Lichen atro-rufus. *Dicks. Crypt. fasc. 4. 22. t. 12. f. 4.*

FOUND by Mr. Dickson, on a hill near Penrith, Cumberland, growing on the red sandy ground among mosses. We have received it, along with a most valuable collection of Lichens besides, from the Rev. Mr. Harriman of Eggleston, Durham. Dr. Acharius seems unacquainted with this species, and we are at a loss whether to refer it to his 6th section (*Parallaria*) or to his 10th (*Pteroma*). The crust is certainly lobed and angular, not leprous, nor undefined; its colour when young is white, but afterwards more or less brownish; the surface smooth, and, though less imbricated, it in some degree approaches the structure of *L. luridus*, *Achar. 95*. The shields are very numerous, sessile, of a dark reddish brown, with a narrow still darker border; they are at first flat, but afterwards become rather tumid, confluent, and extremely irregular in form. They are at all times very smooth, and, when wet, slightly pellucid or waxy.



7

LICHEN scalaris.

Olive and Black Imbricated Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust imbricated, often scattered; its lobes kidney-shaped, ascending, distinct, pale olive; powdery at the edge and back. Shields flat, irregular, black, with a black border.

SYN. Lichen scalaris. *Ach. Prod.* 95.*L. leucophæus.* *Dicks. Crypt. fasc.* 2. 20. *With.* v. 4. 28. *Hull.* 292.*Lecideia scalaris.* *Ach. Meth.* 78.

GATHERED by Mr. James Turner on the inside of old hollow trees near Halesworth, Suffolk. We have received the same from Eton, by favour of Mr. Gotobed. The fructification, which is excessively rare, was first observed on Lord Rous's park pales at Henham, Suffolk, by Mr. D. Turner, whose specimens, compared with those of Dr. Acharius and Mr. Dickson, have ascertained the synonyms as above. Mr. Dickson's *leucophæus* is the very same plant as the *scalaris*, not a variety; but neither the *leucophæus* of *Fl. Dan.* t. 955. f. 2, nor the plant of Dillenius, t. 82. f. 2, is now considered as belonging to it.

The crust is composed of small prominent scaly lobes, often almost separate at their base, of a rounded or kidney-shaped form, a little concave; their inner substance milk white, their upper surface pale olive, smooth, the back and margin white and powdery. Shields sessile, scattered, of a roundish irregular form, with a flat black opaque disk, and when young a narrow border of the same colour.

1501



Spencer's Catalogue of Fishes, London

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L I C H E N *decipiens*.*Stellated Ground Lichen.*

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crustaceous; the fronds separate, roundish, rather concave, tawny-red; white at the margin and underneath. Shields marginal, convex, black.

SYN. *Lichen decipiens*. *Hedwig. Crypt. v. 2. t. 1. f. B. Acbar. Prod. 96. With. v. 4. 26. Hull. 293.*

L. stellatus. Relb. 430.

Pfura decipiens. Hoffm. Pl. Lich. t. 43. f. 1—3.

WE have received specimens of this pretty Lichen, not only from Gogmagog hills by favour of Mr. Relhan, who first found it in Britain, and of Mr. Holme, but even from the highland mountains of Scotland, where the Rev. Mr. Stuart and Mr. Don collected it. The latter is a new station for a plant hitherto supposed peculiar to a calcareous soil.

Its fronds grow on the earth, separate and distinct, not imbricated, though often crowded together as they increase in size. They are concave, roundish or irregularly angular, of a bright reddish or tawny hue when young, with an elegant white edge, so that they might easily be mistaken for shields (see Relhan); whence probably the name *decipiens* given by Ehrhart. The under side is white. In decay the whole frond turns to a dark dirty brown. The real shields are marginal, black, at length convex, and almost globular, frequently remaining after the frond that bears them is turned quite brown and decayed.

This Lichen is well figured and described under the name of *elveloides* by Wulfen in *Jacq. Coll. v. 3. 103. t. 3. f. 3.*



April 1 1801 Published by J. A. Smith, London.

[1955]

LICHEN *glebulosus*.
Broken-crusted Brown-shielded Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust imbricated, minutely lobed, dispersed, glaucous-white; lobes rounded, convex, adherent. Shields convex, deep red-brown, with a thin entire border of the same colour.

SYN. *Lecidea testacea*. *Winch Guide*, v. 2. 42.

ABUNDANT on quartzose rocks at Lanchester, and walls at Knitsley, Durham, according to Mr. Winch, to whom we are indebted for this specimen. We are nevertheless obliged to correct its appellation in that gentleman's work, and to describe it as a new species, the *Lichen saxifragus* of the *Linn. Trans.* v. 1. t. 4. f. 4, *Psora testacea* of Hoffmann, being a totally distinct plant.

The crust of *L. glebulosus* is, as the name implies, composed of innumerable minute fragments or portions, so that it cannot be separated entire from the stone; and those fragments consist of little, imbricated, rounded, convex, often notched, lobes or leaves, smooth and of a pale glaucous white on their upper side, the under being closely adherent to the stone. The aggregate crust has a dirty aspect, from the interstices being darker, or occupied by adventitious matter. The shields are scattered, sessile, small, though much larger than the lobes of the crust; when fresh of a dark but reddish brown, somewhat convex and thick, encompassed with a thin even border, of their own substance and colour, though rather paler. When dry they are almost black.

[1893]

LICHEN crassus.

Thick Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust imbricated, cartilaginous, pale green; its lobes horizontal, rounded, divided, notched and waved; brownish beneath. Shields flattish, brownish-orange, with a pale border.**SYN.** Lichen crassus. *Huds.* 530. *Ach. Prod.* 97. *Hull.* 294.*L. cartilagineus.* *Lightf.* 815. *With.* v. 4. 29. *Dicks. H. Sicc. fasc.* 6. 24.*L. laqueatus.* *Wulf. in Jacq. Coll.* v. 3. 109. t. 5. f. 2. *Lichenoides cartilagineum, scutellis fulvis planis.* *Dill. Musc.* 179. t. 24. f. 74.*Parmelia crassa.* *Ach. Meth.* 183.

FOUND on limestone rocks in the more hilly parts of Britain. We gathered it in great perfection on St. Vincent's rocks below Bristol Hot-wells. It forms broad cushion-like tufts or patches on the earth that covers the rocks. The frond or crust is somewhat leafy, imbricated, brittle and friable, extremely white within; its upper surface smooth, of a light or yellowish green, turning brown with age; the under side brown, or black as if inky, rough. The lobes spread horizontally, rather in a close entangled manner, and are rounded, bluntly lobed and notched, their edge palish. Shields sessile, nearly flat, of a dull rufous orange, with a pale obtuse border. They turn black in decay.

Wulfen erroneously quotes *L. fragilis* of Scopoli, which is *L. Smithii* of Acharius, *Micheli*, t. 51. f. 1, for this which is f. 2. We must exculpate Lightfoot from having confounded this with *L. cartilagineus* of Swartz and Acharius, a plant we believe not found in Britain, and which he certainly never saw.

1893



June 1, 1893. Published by J. C. Severity, London.



LICHEN dædaleus.

*Fine-lobed Imbricated Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Closely imbricated, radiated, membranous, very smooth, brownish grey; pale, with black fibres, beneath: its segments linear, obtuse, undulated. Shields black, with a black border of their own substance.

THE only specimens we have ever seen of this Lichen, were given us long ago by our worthy friend Mr. Menzies, who gathered them in Scotland, apparently on rocks.

The fronds are closely imbricated, entangled, radiated, depressed and uneven; their upper surface of a brownish, somewhat glaucous, grey, peculiarly smooth, but not shining, often blackish here, and there, especially at the edges; pale brown or flesh-coloured and uneven beneath, and clothed with black radicles, often quite black except at the extremities. The segments are linear, curiously zigzag, undulated, or crenate; obtuse, lobed, and often dilated at the ends, closely folded or creeping over each other; bearing several grey, globular, powdery, marginal warts. Shields scattered over the disk of the leaf, the size of a common pin's head, sessile, very black, with an elevated entire border of their own substance and colour.

This species is a true *Lecidea*, according to the system of Acharius, and ranks among the very few with a leafy or membranous frond, but we cannot find any mention of it in the works of that eminent writer. The want of an accessory border to the shields, of the colour and substance of the crust, is the distinctive character of a *Lecidea*, and readily distinguishes this species from the numerous imbricated Lichens, which, having such a border, are *Parmeliæ*.

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[1941]

LICHEN circinatus.
Radiant Crustaceous Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, orbicular, greyish, cracked, marked with radiant marginal lobe-like furrows. Shields central, crowded, depressed, blackish brown, at length angular; with a smooth white border.

SYN. *Lichen circinatus.* *Ach. Prod.* 100. *Persoon in Ust. Ann. fasc.* 7. 25. *Schrad. Spicil.* 94.

L. subimbricatus. *Relh.* 459. *ed.* 1. 427. *t.* 6. *With.* v. 4. 18. *Hull.* 289.

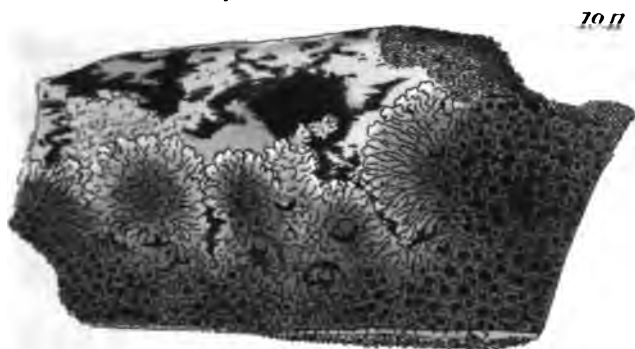
L. radiosus. *Hoffm. Enum.* 62. *t.* 4. *f.* 5.

Psora radiosa. *Hoffm. Pl. Lich.* v. 3. 12. *t.* 59. *f.* 1. *t.* 60. *f.* 3.

Parmelia circinata. *Ach. Meth.* 189. *Winch Guide,* v. 2. 54.

THIS grows on flat calcareous stones, and was sent by the Rev. G. R. Leathes from Bury. We remarked it as a new species on rocks below the bridge at Kirkby Lonsdale, Westmoreland, in 1783. It was however unquestionably first distinguished at Cambridge by Mr. Relhan, who published it the following year. Hoffmann published it the same year, and we know not why neither of their specific names has been retained. To avoid contention and confusion, we submit to that just authority which such a leader in any scientific department as Dr. Acharius has a right to claim, but we wish he had followed the apt name of our countryman, whose figure, drawn in 1783 by Bolton, is excellent. Had *circinatus* been in itself exceptionable, we should have acted as on a former occasion; see *t.* 1778.

The species before us is known by its crust, which though perfectly tartareous and inseparable, is marked with such radiating lines and furrows as to seem lobed and almost imbricated. The innumerable shields are much depressed, occupying the centre, and so crowded as to become angular: their disk dark brown or blackish, deciduous: margin whitish, smooth and entire.



Printed and Published by J. S. Lowry, London.

LICHEN murorum.

*Yellow Wall Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust circular, plaited and lobed, close-pressed, bright yellow. Shields central, crowded, sessile, flattish, orange-coloured, with a smooth border like the crust.

SYN. Lichen murorum. *Ach. Prod.* 101. *Hoffm. Enum.* 63. t. 9. f. 2.

L. flavescens. *Huds.* 528. *Hull.* 292. *Relh.* 459. *Sibth.* 324.

L. flavicans. *With.* v. 4. 25.

L. candelarius β . *Lightf.* 811.

L. candelaris. *Wulf. in Jacq. Coll.* v. 3. 124. t. 6. f. 1.

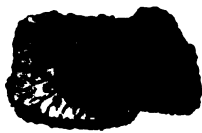
Lichenoides crustosum, orbiculis et scutellis flavis. *Dill. Musc.* 136. t. 18. f. 18, A, C.

Psora saxicola. *Hoffm. Pl. Lich.* v. 1. 82. t. 17. f. 3.

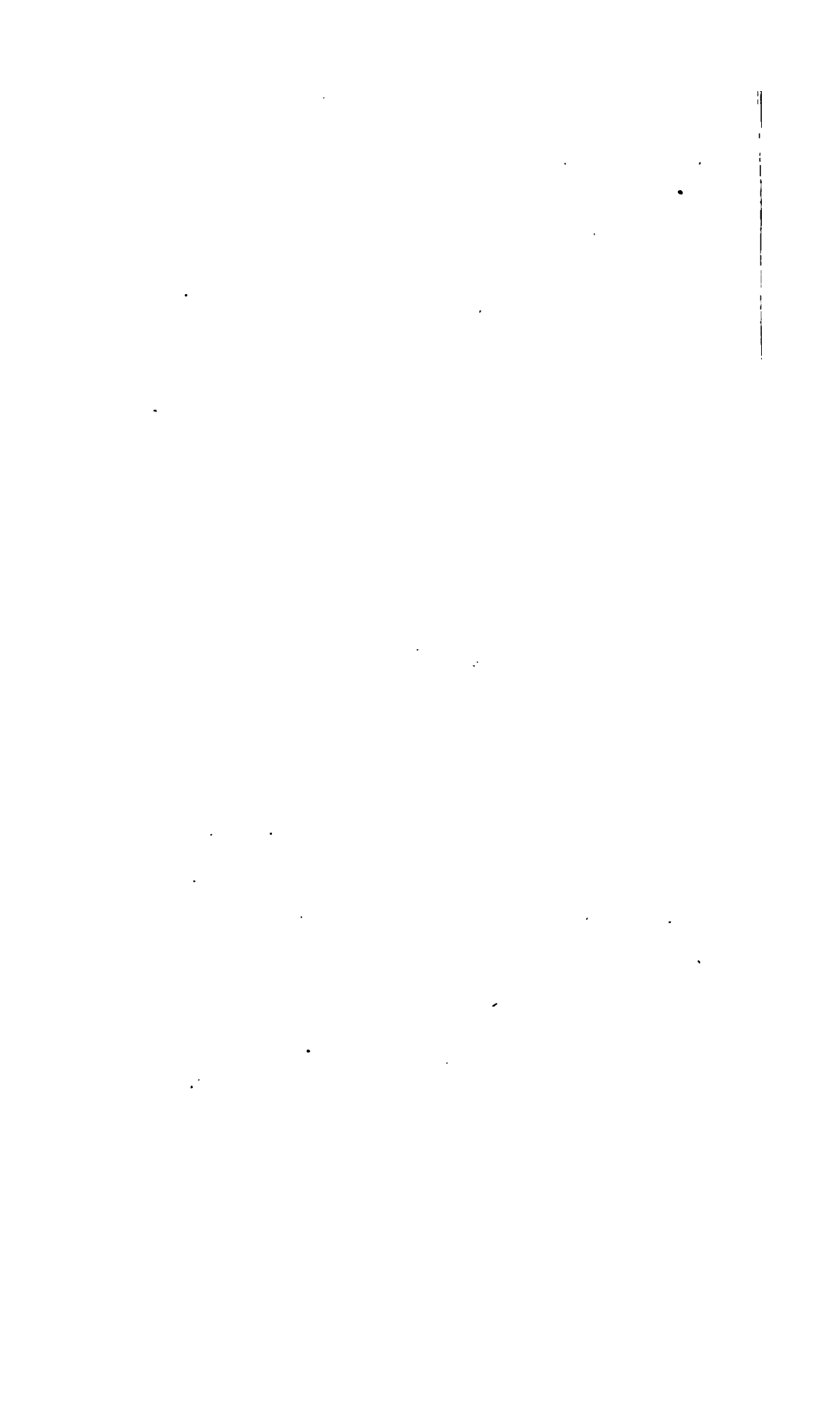
NOTHING can be more common, nor more obvious, than this golden-coloured Lichen on calcareous rocks and stones, and the mortar of flint walls. The crust forms circular patches, closely attached to the stone or mortar, furrowed lobed and crenate in the circumference, but not separable in distinct segments or leaves. This part especially is of the richest golden yellow; the centre is either paler and whitish, or greenish and olive-coloured. Here the numerous shields are crowded, and sometimes they alone, scattered and robbed of their crust, remain. They are small, sessile, with a smooth border of the substance of the crust, and, like that, internally white; their disk is deeper coloured than any other part, flat, at length rather convex.

There has been great confusion between this well marked species and *candelarius*, t. 1794, *vitellinus*, t. 1792, and *elegans*, *Ach. Prod.* 102, nor are we, on the other hand, certain that some others are truly distinct from it.

2157



For ... collected by J. S. Sowerby London



LICHEN elegans.
Elegant Orange Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust hard, smooth, orbicular, radiating, plaited or rugged; its lobes linear, compound, convex, wavy, all of a tawny orange, as well as the shields and their smooth borders.

SYN. Lichen elegans. *Ach. Prod.* 102.

L. sympageus. *Ach. Prod.* 105.

L. fulvus. *Dicks. Crypt. fasc.* 3. 16. *Willd. v.* 4. 33.
Hull. 294.

Lichenoides tenuissimum, *scutellis exiguis miniatis.*
Dill. Musc. 175. *t.* 24. *f.* 68.

Parmelia elegans. *Ach. Meth.* 193. *Winch. v.* 2. 54.

WE are not sure that several distinct Lichens have not been confounded under the above synonyms, but we have in the plate added one of Dr. Swartz's beautiful original specimens from Lapland, that botanists may judge respecting his plant. Those drawn upon the stone were gathered on Salisbury craigs, Edinburgh, in 1781.

This species is most akin to *murorum*, *t.* 2157, but always much smaller in dimensions, and more orange, or fulvous, in colour; the segments are also more inclined to separate, and become linear zigzag and convex. We should suppose Hoffmann's *miniatus*, *Pl. Lich.* *t.* 60. *f.* 1, to be the same with ours, but Acharius now separates it. Hoffmann's *tegularis*, *t.* 17. *f.* 3, is far more unlike *elegans*, though quoted as a variety in the *Methodus* of the learned author just mentioned.

2161



...has been published by J. P. ...

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LICHEN fulgens.
Yellow Ground Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust rounded, lobed and waved, somewhat imbricated, lemon-coloured; whitish when dry. Shields deep orange, at length convex; their border coloured like the crust, obliterated by age.

SYN. Lichen fulgens. *Ach. Prod.* 102. *Swartz. Act. Nov. Ups. v. 4.* 246. *Dicks. Crypt. fasc. 4.* 24. *H. Sicc. fasc. 18.* 24.

L. citrinus. *Hedw. Crypt. v. 2.* 60. *t. 20. f. C.*

L. friabilis. *Villars Dauph. v. 3.* 979. *t. 55.*

Parmelia fulgens. *Ach. Meth.* 192.

Psora citrina. *Hoffm. Pl. Lich. v. 2.* 77. *t. 48. f. 2.*

THE late J. Adams Esq. F. L. S., is recorded by Mr. Dickson as the discoverer of this elegant Lichen on rocks slightly covered with earth, near Stackpole-court, Pembrokeshire. It has been found in Germany, Switzerland, France and Sweden. Our specimens were gathered by Mr. Turner and Mr. W. Borrer on cliffs by Freshwater bay, Isle of Wight, and at New Haven, Sussex, in June last.

The fronds are closely attached to the soil by innumerable minute radicles, and are of a friable texture, spreading circularly, and composed of partly imbricated rounded lobes. The colour when wet is a beautiful bright lemon hue, which changes in almost every part of the frond when dry to a dead white; but moisture restores the original colour instantaneously at any distance of time. Shields about the centre of each frond or principal lobe, sessile, round, of a rich deep orange; their margin when young elevated, smooth, more permanently yellow than the crust. As the shields grow old and convex the margin is more or less obliterated.

This species is most akin to *L. lentigerus*, *t. 871*, with which it commonly grows.

1667



Novelty. Published by J. I. Sowerby London.

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L I C H E N canescens.

*Grey Tree Lichen.**CRYPTOGAMIA Alga.***GEN. CHAR.** Male, scattered warts.

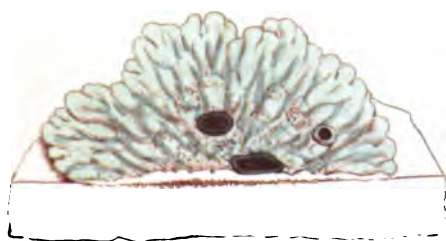
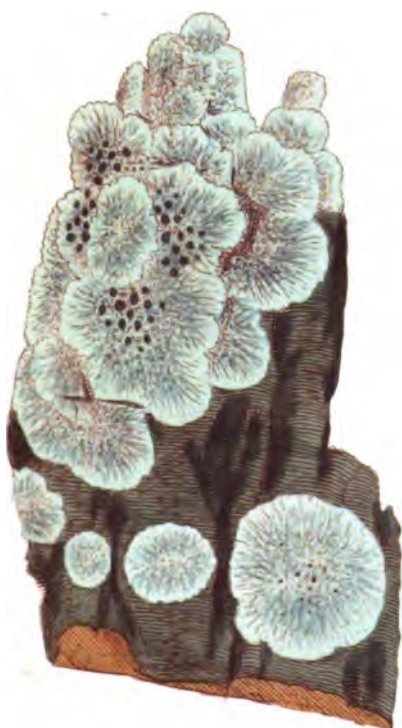
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crustaceous, spreading; rugged and rather leafy at the edge; of a glaucous grey. Shields central, depressed, black, with a narrow blackish border.**SYN.** *Lichen canescens. Dickf. Crypt. fasc. 1. 10. t. 2. f. 5. Wsb. v. 4. 9. Sibth. 324.**L. incanus. Relb. 424.**Lichenoides cinereum, merè crustaceum, eleganter expansum. Raii Syn. 71.**L. crustosum orbiculare incanum. Dill. Musc. 135. t. 18. f. 17 A.*

MR. DICKSON first, of all our late systematic authors, described this common species, which though extremely frequent on the barks of old trees, being rarely found in fructification, had been generally overlooked for *L. pallescens*.

It grows in a crustaceous manner flat upon the bark, forming patches, which often meet and run into each other. When separated with a knife it is found to be mealy, pliable and somewhat leafy towards the edge, its inner substance very white, the under side sometimes of a delicate pale flesh-colour. The upper side is concentrically rugged, of a light glaucous grey, not shining, often sprinkled with white powdery spots, which Dillenius, perhaps rightly, considers as the male pollen; but he errs in believing it to be always produced on distinct plants from the shields. The latter are very rarely found, and only on the oldest plants, growing clustered in the middle part. They are flat and depressed, blackish, with a narrow, rather paler, margin.

Mr. D. Turner observes that when growing on walls or roofs it often decays in the centre, or is centrifugous.



Acropora digitifera (Forsk.) Dana

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LICHEN candicans.

*Whitish Radiating Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, thin, orbicular, plaited, lobed and radiating at the margin, bright greyish white. Shields clustered, greyish black, slightly convex, with a plaited, elevated, white border.

SYN. Lichen candicans. *Dicks. Crypt. fasc. 3. 15. t. 9. f. 5. With. v. 4. 17. Hull. 289.*

L. epigeus. Ach. Prod. 105.

Parmelia epigea. Ach. Meth. 191.

FIRST observed by Mr. Dickson on rocks in Yorkshire, and published by him in 1793. In the following year it was described in Usteri's *Annalen, fasc. 7. p. 25*, under the name of *L. melanocarpus*, by the learned Persoon, who discovering that name to be preoccupied, changed it in the same volume, p. 155, to *epigeus*, and the latter is adopted by Acharius. We might perhaps waive Mr. Dickson's right of priority, were the name given by him less eligible than the other; but *epigeus* (*growing on the earth*) conveys an erroneous idea, our plant being always found either on hard calcareous rocks or on chalk, as observed by Mr. W. Borrer at Cheddar, and near Bristol, as well as on the chalky summit of Beachy head, Sussex.

This is both an elegant and uncommon Lichen. Its thin hard crust is not to be separated, without destruction, from the rock, on which it forms roundish patches, about an inch broad, of a brilliant blueish white, the external part being plaited, lobed and radiating. The surface is smooth and hard. Shields more or less crowded, sessile, round, flattish, greyish black, with a neat, elevated, at length plaited or crisped border, of the colour and substance of the crust.

1778



Sup. Vol. 1. Published by J. S. Edwards, London.

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LICHEN lentigerus.

White Ground Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

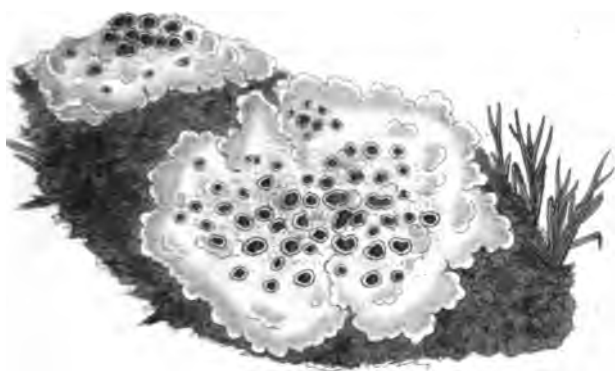
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crustaceous, rounded, lobed and waved, somewhat imbricated, greenish white. Shields a little convex, reddish buff-coloured, with a white margin.

SYN. Lichen lentigerus. *Weber. Goett.* 192. t. 3. *Achar. Prod.* 103. *Relb.* 430. t. 7. *With.* v. 4. 27. *Hull.* 292.*Flora lentigera.* *Hoffm. Pl. Lich.* t. 48. f. 1.

A COMPANION of the Lichen represented in our last plate, on the dry chalky heaths and hills of Cambridgeshire, for specimens of which we are obliged to Mr. Relhan and Mr. Holme.

It first appeared as a British species in the *Flora Cantabrigiensis*, accompanied by a figure, and is in its native situations so elegant and striking an object, that we wonder it could escape all preceding writers. It forms roundish patches an inch or two in diameter, consisting of a thickish chalky crust, closely attached to the ground, snow-white within, and frequently so on the upper side, though generally tinged (when moist) with a pale green hue, particularly near the circumference, which is crenate lobed and undulated, the very edge being pure white. The whole plant has, as Weber expresses it, a kind of porcelain-like brilliancy. The shields are numerous, moderately raised, with a slightly convex disk of a waxy brownish buff-colour, surrounded by a white border. By age apparently they become sprinkled with little black protuberances, which should seem to be the seeds; and yet we have found them on some shields whose small size, and therefore probably tender age, scarcely authorised this opinion, and would rather induce a suspicion of these black substances being parasitical.



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LICHEN saxicola.
Radiated Wall Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust circular, finely lobed, somewhat imbricated, pale sulphureous green; the lobes cut, crenate, zigzag and entangled. Shields central, crowded, flattish, tawny brown, with a pale uneven border.

SYN. Lichen saxicola. *Ach. Prod.* 104.

L. muralis. *Dicks. Crypt. fasc.* 1. 11. *With. v.* 4. 29.

Hull. 292. *Relh.* 460. *Sibth.* 417. *Abbot.* 264.

Psora muralis. *Hoffm. Pl. Lich. v.* 1. 77. *t.* 16. *f.* 1.

Parmelia saxicola. *Ach. Meth.* 191.

NOT very uncommon on sandstone rocks, brick walls, and loose flinty stones in open situations. On the broad flat stones with which houses are tiled in Yorkshire, it grows peculiarly luxuriant, spreading into a circular band a foot or more in diameter, the centre being entirely obliterated by time.

Most generally it occurs in round patches an inch or two broad, of a pale greenish sulphur-colour, closely attached, more or less neatly lobed and imbricated according to the hardness and smoothness of what it grows upon. The crust is cut into narrow linear segments, closely entangled and in some measure imbricated, dilated and crenate externally, smooth, scarcely separable from the stone. Shields small, crowded, central, sessile, almost flat, rather browner than the crust, but having a crenate or uneven border of the same substance and colour as that part. On moist mossy walls is found a more lax and dilated variety, of which we exhibit a specimen.

We do not see why Pollich's name *saxicola* has been preferred to the older and equally suitable one of Schreber, *muralis*.

[1375]

LICHEN incurvus.

Incurved Yellow-warted Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Slightly imbricated, membranous, partly crustaceous, pale yellowish green; its segments much divided, narrow, radiating, convex, incurved. Warts yellowish. Shields chesnut-coloured.

SYN. Lichen incurvus. *Persoon in Ust. Annal. fasc. 7. 24. Achar. Prod. 107.*L. multifidus. *Dicks. Crypt. fasc. 3. 16. t. 9. f. 7. With. v. 4. 28. Hull. 294.*

SPECIMENS of this elegant Lichen have been sent us from Durham by the Rev. Mr. Harriman, and from Scotland by Mr. G. Don. It grows on quartz and sandstone, only in mountainous countries.

Sometimes the fronds spread in a regular and beautiful circle, but they are frequently interrupted in their growth by the ruggedness of the stones to which they are attached. The centre is almost crustaceous, the margin leafy, membranous, somewhat imbricated, repeatedly cut into narrow divaricated convex segments, whose margins and extremities, wherever they have an opportunity, are incurved. Their edges are often black, but the general colour of the frond is a pale yellowish green, or sulphur-colour. Yellowish powdery warts are plentifully sprinkled over the surface. The shields are more rare, nearly sessile, small, reddish brown, flat, with a thick, elevated, often powdery, margin, of the colour of the leaf.

1875



Nov. 1884. Published by J. S. Sowerby, London.

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[1052]

LICHEN *cæsius*.*Grey-warted Lichen.*

CRYPTOGAMIA *Algæ*.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, convex, entangled, greyish white; its segments many-lobed and notched. Warts scattered, powdery, grey. Shields glaucous-black, with whitish margins.

SYN. Lichen *cæsius*. *Achar. Prod.* 107. *Schrad. Spicil.* 93.L. Pfora. *Dicks. Crypt. fasc.* 3. 17. *Witb. v.* 4. 26. *Hull.* 293.Pfora *cæsia*. *Hoffm. Pl. Lich. t.* 8. *f.* 1.

OUR specimens of this Lichen (which Mr. Dickson first made known as an English species) were gathered by Mr. Turner on walls, gravestones, &c., in the church-yards of Burgh and Bradwell, Suffolk, and Acle, Norfolk; and by Mr. Sowerby on the flaty roof of Richmond house, Richmond park. The narrow, convex, imbricated, and entangled fronds form a loose uneven crust, soon losing its original orbicular figure, besprinkled with round convex powdery warts, of a rather whiter hue than the pale grey of the frond. The ultimate lobes are dilated, subdivided and notched, clothed with short brown fibres beneath. The shields rarely occur with us, but are sometimes very copious, small, with an elevated crenate border of the colour of the frond: their disk is flat, glaucous when dry, but if moistened or rubbed it becomes black.—The powdery warts, and the more brittle, narrow, and intricate structure of the plant, distinguish this species with sufficient certainty from *L. stellaris* and all the neighbouring kinds.



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[1696]

LICHEN virellus.

*Little Green Imbricated Lichen.*CRYPTOGAMIA *Algae.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, flexible, stellated, greyish-green; its segments flat, short, lobed, obtuse; black and spongy beneath; sprinkled above with powdery warts and reddish lucid grains. Shields dark brown, with a green, smooth, inflexed border.

SYN. Lichen virellus. *Ach. Prod.* 108.*Parmelia virella*. *Ach. Meth.* 201.

GATHERED by Mr. W. Borrer on trees and pales in Saxen, and ascertained by comparison with specimens from Dr. Acharius.

The fronds form small irregular patches, spreading in a radiant manner, but often running into each other, and may easily be separated, when moist, from the wood or bark. The segments are short, narrow, zigzag, obtusely lobed, somewhat imbricated, flat and smooth above, of a fine green when wet, changing to a pale dull grey when dry. Pale powdery warts are scattered over them, and towards the younger extremities are often found small smooth prominent little points or grains, when fresh and moist clear and reddish, but soon becoming black. The under side of the frond is clothed with dense black spongy hairs, which project like a fringe beyond the edges. The shields are scattered, nearly sessile, small, round, dark reddish brown or black, rather convex, with a thick smooth elevated entire margin, of the colour and substance of the frond. Sometimes a sort of fringe crosses the shields underneath, supposed to be an exclusive character of *L. saxatilis* of Acharius, which however we think a distinct species from this. How far *L. cycloselis* of the same eminent author, a very common plant, is distinct from *L. virellus*, we are by no means satisfied.

1696



See. 1696. Published by J. E. Harvey, London.

[2158]

LICHEN clæinus.
Orbicular Olive Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, depressed, stellated, membranous, dark greenish olive; smoothish, and of the same colour, beneath; its segments close-pressed, pinnatifid, linear, obtuse. Shields central, brownish-black, with a border like the crust.

SYN. *Parmelia clæina.* *Ach. Meth. Suppl.* 45.

THIS, as Mr. Borrer observes, is not rare on the barks of elms and fruit-trees, nor much more so on flint walls. We are obliged to that gentleman for the specimens here exhibited. We have for some time remarked the same on walls and trees about Norwich, but hesitated how to distinguish it from *cycloselis*, t. 1942. These specimens, compared with those of Acharius, and with his description, have at length entirely satisfied us.

The present Lichen differs from *cycloselis* in its smaller size, thinner texture, and blackish olive hue, as well as in being much more closely pressed to the bark, like a crustaceous Lichen, and in the almost total want of fibres on its under side, so that nothing like a fringe is discernible at the edges of the narrow, linear, abrupt, zigzag segments which compose the circumference. Pale scattered mealy warts are seen here and there towards the middle, and still more in the centre appear several small shields, with a thick, inflexed, smooth border of the substance of the leaf, and a flat blackish-brown disk.

2158



From a collection by J. H. Lawrence, London.

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LICHEN aquilus.

Sun-burnt Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, somewhat cartilaginous; its segments linear, many-cleft, convex, incurved at the edge, of a dull tawny brown; shaggy beneath. Shields dark brown.

SYN. Lichen aquilus. *Achar. Prod.* 109.L. fuscus. *Huds.* 533. *Dicks. H. Sicc. fasc.* 6. 25. *Hull.* 293.L. pullus. *Lightf.* 825.L. obscurus. *With.* v. 4. 28.Lichenoides angustifolium fuscum, scutellis pullis. *Dill. Musc.* 175. t. 24. f. 69.

FOUND on exposed rocks about Edinburgh by Lightfoot; in North Wales by the Rev. H. Davies; and in Cornwall by Mr. Turner and Mr. Sowerby. It is a rare species, apparently but little known on the continent.

The fronds are entangled and imbricated, forming broadish uninterrupted patches, but loosely fixed to the rocks by the fibrous brown radicles that clothe their under sides, and in dry weather starting from them and becoming very brittle. They are linear, various in breadth, though always narrow compared with most species, repeatedly forked and lacinated, convex (their edges being inflexed); smooth, of a tawny brown or sun-burnt hue, very pale towards their extremities. Shields numerous, not large, dark-brown, with a thick, inflexed, rugged or crenate border of the colour and substance of the frond.

We have hesitated which name out of the four synonyms to retain. *Fuscus*, the oldest, has been generally neglected; *pullus* has been given to many other Lichens. Either of these however would have been eligible, as being included in the synonym of Dillenius, had not Dr. Acharius chosen a new and perhaps happier denomination.

9.82



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[2048]

LICHEN stygius.

Stygian Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated; its segments linear, zigzag, many-cleft and somewhat palmate, solid, convex on both sides, of a shining pitchy black, with white warts; and with black radicles beneath. Shields of the same hue, with a thin crenate border.

SYN. Lichen stygius. *Linn. Sp. Pl.* 1610. *Fl. Suec.* 411.*Ach. Prod.* 109. *Dicks. Crypt. fasc.* 3. 16. *H. Sicc. fasc.* 2. 25. *With. v.* 4. 30. *Hull.* 293.*Squamaria stygia. Hoffm. Pl. Lich. v.* 2. 3. *t.* 25. *f.* 1.*Parmelia stygia. Ach. Meth.* 203.

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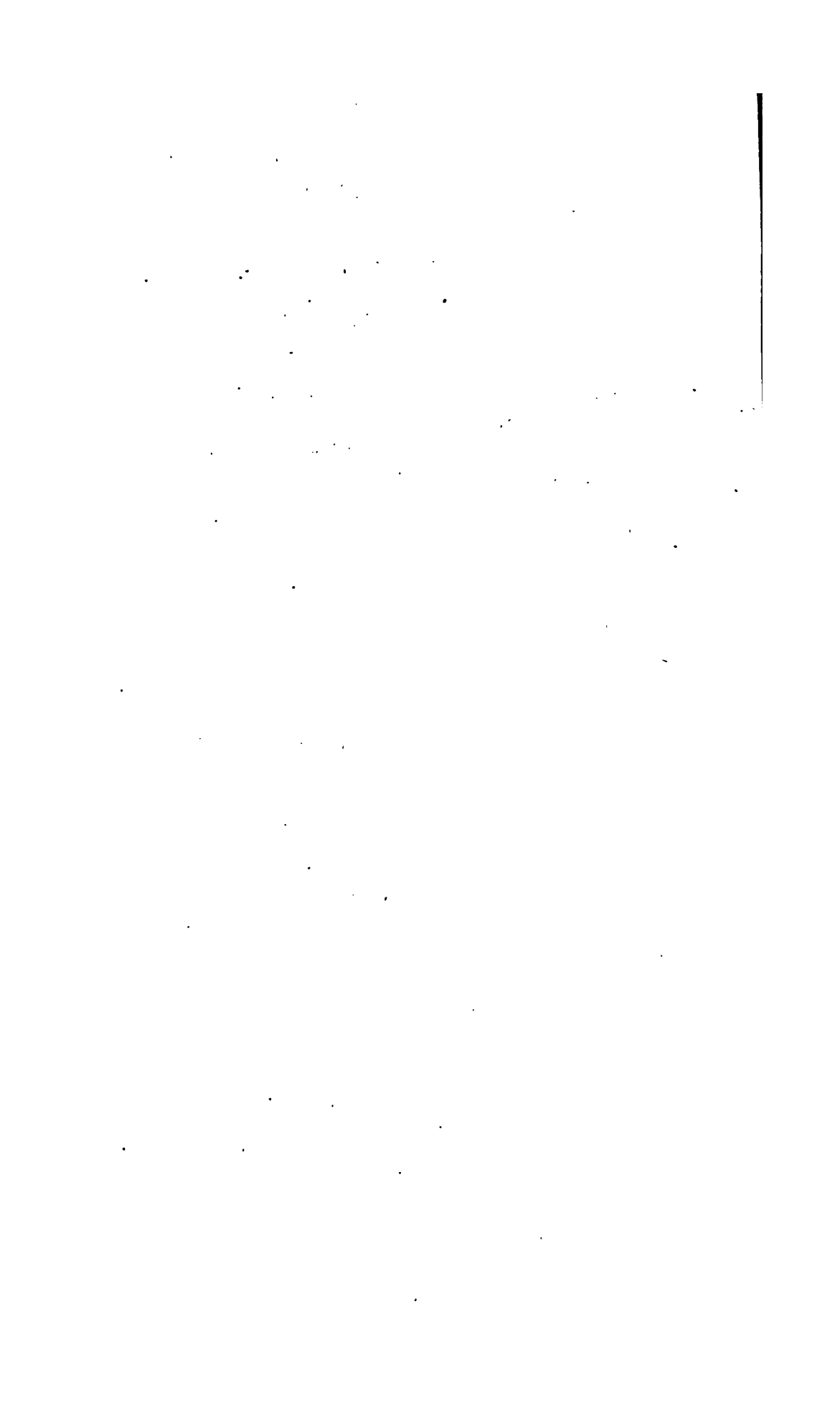
E received this many years ago from the Highlands of Scotland by favour of the Rev. Dr. Stuart, and Mr. Dickson has found it in the same country, growing on elevated exposed rocks.

It has been thought not easily distinguishable from *L. fuliginensis*, *t.* 653, with which it agrees in forming entangled tufts, of a pitchy black, occasionally tinged with olive; but it differs essentially in being convex on both sides, of a considerable thickness, white and solid internally, and smooth-edged. The extremities are lobed or palmate, rather paler than the other part. Under side very black, producing numerous scattered radicles. Several minute white mealy specks, like cracks, are found here and there on the upper surface. Shields few, of the colour of the leaf, with a thin, crenate, or somewhat beaded, border.



Very much like the first, but smaller

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LICHEN encaustus.

Encaustic Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated; its segments linear, wavy, tumid, constricted, repeatedly forked, solid, convex on both sides; of a dirty unpolished white, with black specks, above; black, opaque, wrinkled, without radicles, beneath. Shields reddish-brown.

SYN. Lichen encaustus. *Sm. Tr. of L. Soc. v. 1. 83. t. 4. f. 6. Ach. Prod. 123.**L. multipunctus. Ehrh. Crypt. 305.**Squamaria pulla. Hoffm. Pl. Lich. v. 2. 28. t. 32. f. 2.**Parmelia encausta. Ach. Meth. 202.*

SENT from Ben Nevis by the Rev. Dr. Stuart as a distinct species from the preceding, with which every British botanist besides, even Mr. Dickson in his *H. Sicc.* has confounded it. This is not at all to be wondered at. We plead guilty to the same charge, nor is it till after the most careful comparison of a series of specimens, that we are satisfied the dirty ill-looking Scottish plant can be the same with our elegant alpine one, to which, from its appearance of having been enamelled white, as with fire, on a black ground, the name of *encaustus* was originally given.

The segments vary prodigiously in breadth, as well as in the smoky white of the upper side. They are distinguished from *L. stygius* by numerous black dots on that side, and by the blueish-black wrinkled under one, destitute of radicles, and pale at the ends. The shields vary in hue from a bright bay to a deep chesnut. Their border is whitish, inflexed and crenate.—Hoffmann mistook this Lichen for Lightfoot's *pullus*, our *aquilus*, *t. 982.*

2049.



Specimens of the same species as the one in the preceding plate.

LICHEN fahlunensis.

Flat Black Rock Lichen.

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated; its segments linear, forked, flat, of a shining olive black; coal-black and naked beneath. Shields dark brown.

SYN. Lichen fahlunensis. *Linn. Sp. Pl.* 1610. *Huds.* 532. *With.* v. 4. 30. *Hull.* 293. *Dickf. H. Sicc. fasc.* 14. 23.*Lichenoides tinctorium atrum, foliis minimis crispis.* *Dill. Musc.* 188. t. 24. f. 81.*Squamaria Fahlunensis.* *Hoffm. Pl. lich. v.* 2. 45. t. 36. f. 2.

LINNÆUS named this Lichen from having found it plentifully on the dreary rocks about the copper-mines of Fahlun in Sweden, where he tells us very few of the genus grow, either on stones or trees. Mr. Hudson had it from Lancashire and Scotland. Our specimen was gathered by Mr. Griffith in North Wales.

It grows in spreading flat patches, attached to the rocks rather by its under surface than by any preceptible roots, for it is quite smooth beneath, by which, if other marks were wanting, it might at once be known from every variety of *L. omphalodes*, t. 604. The under side is quite black, but not destitute of polish. The whole plant indeed is almost black when dry. When moist it assumes a very dark olive hue, smooth and shining. The segments are linear, numerous, flat or rather concave, by no means convex, by which last mark it is essentially distinguished from *L. flygius*. The edges of the segments form an undulating line, and are black, either entire or finely toothed and granulated. Shields numerous, of a deep blackish chestnut, having when young an elevated crenate margin, which is obliterated by age.



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[1697]

LICHEN stellaris.

Black-shielded Stellated Lichen.

CRYPTOGAMIA Alge.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, flexible, stellated, pale unchangeable grey, at length rugged and granulated; its segments linear, convex, repeatedly subdivided; beneath whitish with black fibres. Shields greyish black, with a grey inflexed border.

SYN. Lichen stellaris. Linn. Sp. Pl. 1611. Hud.

55A. With. v. 4. 31. Hull. 294. Relk. 460.

Sick. 325. Abbot. 264. Lightf. 824.

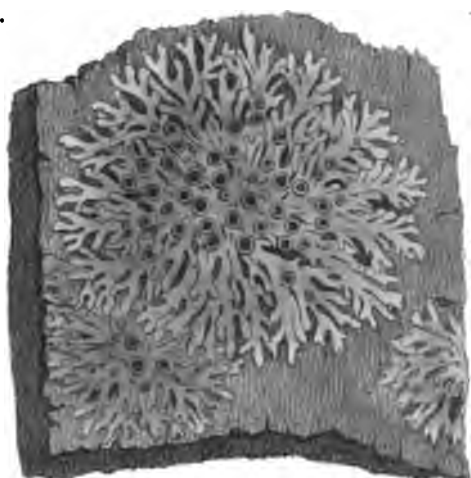
Lichenoides cinereum, segmentis argutis stellatis, scutellis nigris. Dill. Musc. 176. t. 24. f. 70.

L. arboreum, crusta foliosa albo-cinerea, tenuiter et eleganter dissecta, scutellis nigris. Raii Syn. 74.

Parmelia stellaris. Ach. Meth. 209.

A VERY common species on the bark of trees, where it forms round or patches, conspicuous for their neat radiating figure and their bright silver-grey hue, which is nearly the same whether wet or dry, and never assumes any tinge of green. The crust is easily separable from the bark, to which it adheres by numerous black or brown fibres, springing from its whitish under surface. The upper surface is smooth when young, but in process of time becomes finely rugged or at length granulated. Segments linear, convex, imbricated, many and repeatedly subdivided; their extremities obtuse. Shields very numerous, small, round, black or greyish-black, with a thin grey inflexed border, commonly smooth and entire, but sometimes cleft. How far *L. anibelinus* and *auratus* of Achardus are really distinct from this, we are not certain. The former is widely so, though made a variety by Hübner. Lightfoot. &c. When the last-named author mentions a variety of *L. stellaris* with central warts, he alludes to the variety *L. orbis*, v. 15. t. 1052, the warts being of the same size as the shields. The figure of *L. orbis* in Lightfoot's figure is the same, but has not been

1697



See also: Published by J. C. Somerville, London.

[1779]

LICHEN Clementi.

Clementine Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust very mealy, with a membranous, radiating, lobed and finely cut margin, of a whitish unchangeable grey. Shields blueish black, with a white, inflexed, crenate border.

SYN. Parmelia Clementi. Turn. MSS.

MR. TURNER has named this new Lichen in honour of our common friend Don Simon de Roxas Clemente, who first found it on olive trees near Cadiz. Mr. Borrer finds the same, not uncommonly, on trees and tiled roofs in Sussex, as well as about Tunbridge wells and Southampton, and has long ago favoured us with specimens.

It is a beautiful species when growing on an even surface, forming roundish patches, about 2 inches or more in diameter, of a light blueish grey, varying but little from moisture, very powdery or mealy about the central part, and often to the very edges. The margin however is naturally membranous, finely lobed and cut, smooth, white beneath, closely attached to the bark or tile, while the powdery part is never lobed nor divided. The shields are few and rare, about the central region, at first concave, and almost covered with their inflexed, thin, crenate border, but at length somewhat larger, with a black disk, clothed, especially when wet, with blueish hoariness.

Mr. Turner justly points out the affinity of this to *L. stellaris*, t. 1697. We lament that our plate of the latter, from an unpardonable blunder of the colourers, has a green hue never seen in the plant itself, which has the silvery grey colour of the present species, as was accurately expressed in Mr. Sowerby's original drawing.

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[1979]

LICHEN speciosus.

Elegant Garland Lichen.

CRYPTOGAMIA Alge.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, radiated, somewhat cartilaginous, greenish white; snow-white with grey fibres beneath; its segments linear, slightly fringed, obtuse and powdery at the extremities. Shields brown, with a white, notched or leafy, border.

SYN. Lichen speciosus. *Wulfen in Jacq. Coll. v. 3. 119.**t. 7. Ach. Prod. 123.**Parmelia speciosa. Ach. Meth. 193.*

FEW botanists are acquainted with this Lichen, nor could we, in the difficult tribe to which it belongs, have been certain of it but for authentic German specimens, which Mr. Turner has compared with those discovered by himself and Mr. W. J. Hooker at Ballachulish, in North Britain, near Fort William, one of which is drawn in our plate. The fructification however, being extremely rare, and never yet met with in Britain, we have been obliged to supply from a North American specimen, communicated long ago by our ever respected and lamented friend Mr. Forsyth.

The fronds spread among moss, and are loosely imbricated, depressed, deeply cut into linear, many-cleft, radiating segments, whose dilated very obtuse extremities are powdery. Upper surface smooth, tolerably even, light greenish or glaucous, (we have never seen it so green as in Wulfen's figure), blueish-white when dry; under surface of the lobes pure white, with a few grey or black fibres, the more central under part clothed with dense black radicles. The margin is slightly or occasionally fringed. Shields sessile, rather convex, brown; their border of the substance and colour of the frond, inflexed, crenate, at length encircled with an elegant series of leaves like a garland, as in *L. Burgessii*, *t. 300.*

1979

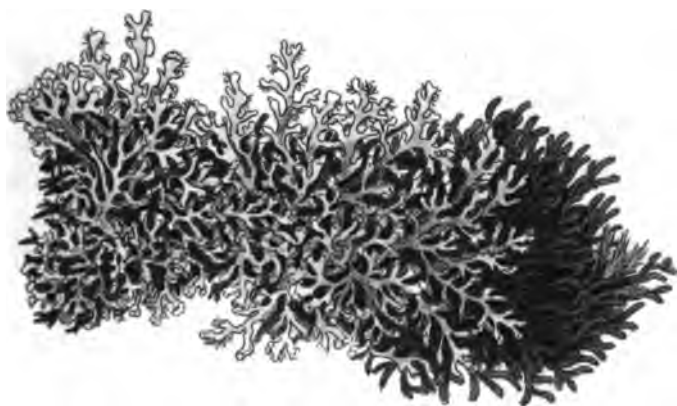


Fig. 1. 1809 Published by J. S. Sowerby, London

LICHEN pulverulentus.
Green Powdery Stellated Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, flexible, stellated, deep glaucous green; hoary-ashcoloured when dry; its segments dilated, flat, obtuse, wrinkled; black and downy beneath. Shields glaucous-black, with a thick, inflexed, at length leafy, border.

SYN. Lichen pulverulentus. *Schreb. Lips.* 128. *Ach. Prod.* 112. *Relh.* 461. *Sibth.* 325. *Hagen.* 66. *t.* 2. *f.* 8.

L. stellaris β & γ . *Huds.* 534. *With.* v. 4. 31. *Hull.* 294. *Lightf.* 824 β .

L. allochrous. *Ehrh. Crypt.* 187.

Lichenoides glaucum orbiculare, segmentis latiusculis, scutellis nigris. *Dill. Musc.* 177. *t.* 24. *f.* 71.

L. arboreum et saxatile, crustâ foliosâ tenui, fusco-virenti, in segmenta latiora plerumque divisa. *Dill. in Raii Syn.* 74; also *L. arboreum*, crustâ foliosâ informi, scutellis subnigris, limbo cinereo crispo cinctis. *Dill. in R. Syn.* 75.

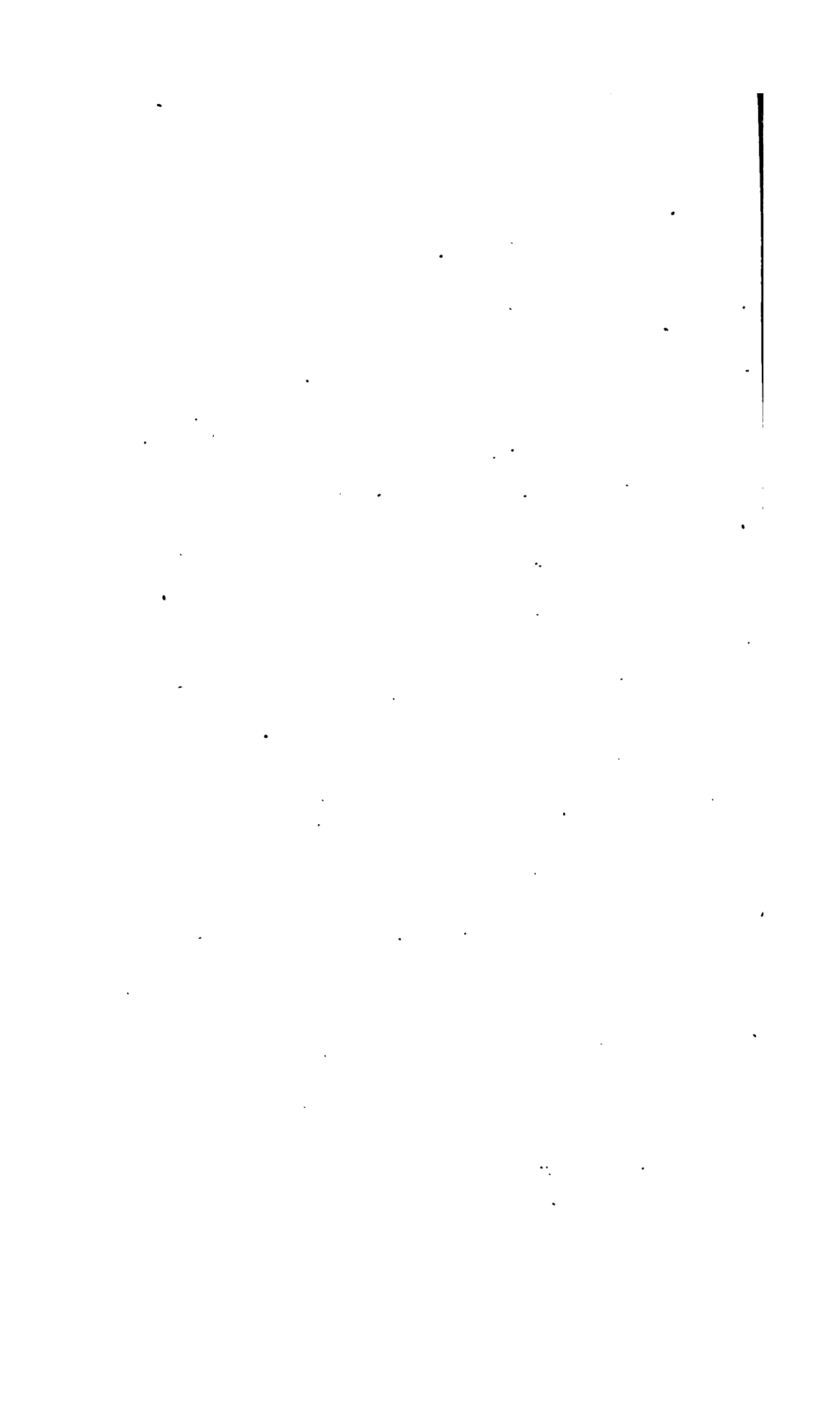
Parmelia pulverulenta. *Ach. Meth.* 210.

VERY common on the trunks of Ashes, Oaks, Beeches, &c., at all seasons, but growing most in the moist winter months.

Nothing can be more distinct than this species from the *L. stellaris*, *t.* 1697, with which Linnæus and his followers confounded it, though unhappily our figure of that, by a gross error of the colourer, is made green, whereas the plant is of a silver grey; unaltered by moisture, which in Mr. Sowerby's original drawing was faithfully expressed. The present species, on the contrary, is of a fine, deep, rather glaucous, green when wet; of a dull, brownish, grey when dry. The fronds are also larger, composed of broader, more dilated and rugged segments. The shields are larger and more clumsy, first grey, then black, with a thick border of the substance of the leaf, which as it advances in age acquires a scaly, and often leafy, circumference.



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[2064]

LICHEN pityreus.
Scurfy Imbricated Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, flexible, glaucous-green; hoary-ashcoloured when dry; its segments dilated, concave, rounded, crenate, very powdery at their lateral margins; pale and fibrous beneath. Shields glaucous-black, with a broad, inflexed, very powdery border.

SYN. Lichen pityreus. *Ach. Prod.* 124.

L. pulverulentus. *Ehrh. Crypt.* 285.

L. lanuginosus. *Hoffm. Enum.* 82. t. 10. f. 4.

TO Mr. W. Borrer and Mr. Turner belongs the honour of first determining this as a species in England, though I gathered it on a wall at Strumpshaw, along with *L. cæsius-rufus*, t. 1040, in July 1783, but without shields, and was persuaded to refer it to *pulverulentus*. Mr. Turner aptly named the plant *farreus*, from its mealy aspect; but finding that Ehrhart has published it by an appellation of similar meaning, we adopt his name. It is strange that Acharius should have confounded it, in his *Prodromus* and *Methodus*, with his own *lanuginosus*. This latter is called *membranaceus* by Dickson, an excellent name for it; but still we cannot retain *lanuginosus* for the plant before us, on account of its inaptitude, and the confusion that would ensue.

L. pityreus is common in Norfolk and Suffolk on old trees and brick walls, usually not very high above the ground, running closely over tufts of moss and accumulated earth. It always forms smaller patches than *L. pulverulentus*, t. 2063, its lobes are more depressed and concave, its colour a paler more glaucous green when wet, and the lateral edges of its segments are distinguished by thick whitish powdery tufts or granulations, not found in the former; neither are the fibres of its under side so dense or near so black. The centre of the frond becomes a mass of these powdery granulations, and the thick incurved border of the shields, which are rare, small and blackish, is covered with them. The Rev. G. R. Leathes sent our specimens from Bury.

2064.



Engraved and published by J. Hensley, London.

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[1942]

LICHEN *cycloselis*.
Orbicular Dusky Lichen.

CRYPTOGAMIA *Age*.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, depressed, stellated, glaucous-brown; underneath black and fibrous; its segments linear, flattish, cut and lobed, bearing white mealy warts. Shields brownish-black, with a grey, inflexed border.

SYN. *Lichen cycloselis*. *Ach. Prod.* 113.

L. orbicularis. *Hoffm. Enum.* 68. t. 9. f. 1. *Schrad. Spicil.* 96.

Placodium orbiculare. *Hoffm. Pl. Lich.* v. 3. 16. t. 66. f. 1.

Parmelia cycloselis. *Ach. Meth.* 199.

THOUGH none of our British authors has described this *Lichen*, it is very distinct, and by no means uncommon. We first noticed it on large trees in Mr. Crowe's garden at Lakenham, afterwards at Scething, Norfolk, and on old pales at Gisleham, Suffolk. Mr. Borrer finds it in Sussex, Mr. Turner about Yarmouth, as mentioned in the *Bot. Guide* 455, &c.

Its colour is a dusky grey, verging sometimes to a greenish olive, sometimes to an olive brown. The fronds grow circularly, an inch or more in diameter, very flat except in advanced age; their segments closely imbricated and entangled, linear, narrow, cut and subdivided, sometimes a little convex, but mostly flat or concave. The under side is covered with dense black fibres, projecting beyond the edges. Numerous mealy warts stand on the edges of the segments, always nearly white, or pale greenish grey. Shields small, blackish or dark brown, with a thick inflexed pale grey border, crenate when old. They are not fringed underneath as in the foreign *L. ustulatrix*.

1942



Original Published by J. G. Sowerby London.

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LICHEN omphalodes.

*Purple Rock Lichen.**CRYPTOGAMIA Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated; its segments many-lobed, shining, dark purplish brown, with white zig-zag cracks; black and very shaggy beneath. Shields dark chestnut.

SYN. Lichen omphalodes. *Linn. Sp. Pl.* 1609. *Hudf.* 532. *Lightf.* 818. *With. v. 4.* 34. *Hull.* 295. *Lichenoides saxatile tinctorium, foliis pilosis purpureis.* *Dill. in Raii Syn.* 74. *Musc.* 185. *t.* 24. *f.* 80.

WE received this with the last described from North Wales, by favour of the Rev. Mr. Davies of Aber. It is altogether a mountain species, and much more rare than *L. saxatilis*. The high stony moors of North Wales, Scotland, and Derbyshire abound with it, as Cromford Moor near Matlock, where I have examined many hundred specimens without finding more than 2 or 3 shields.

It is generally distinct enough from the preceding, and known by its finer segments, dark purplish brown hue, polished surface, not pitted, but full of transverse zig-zag white cracks, and destitute of warty roughness. The under side is more thickly and universally shaggy with coal-black hairs that project beyond the lateral edges of the segments. The shields have grey edges, and a dark brown disk. Nevertheless some varieties of *L. saxatilis* so nearly approach this in every thing but colour, that I have, like Mr. Lightfoot, been often puzzled how to draw the line of discrimination.

L. omphalodes is sometimes called Cork or Archell, and is used by the Highlanders and Welch to dye purplish colours, as well as *L. tartareus*, *t.* 156. It is prepared by soaking in urine, till it softens into a paste, and is then dried in the sun. *Fl, Scot.*



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L I C H E N faxatilis.

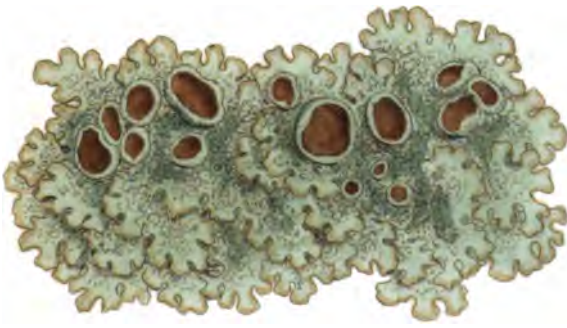
*Grey Stone Lichen.**CRYPTOGAMIA Alga.***GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated; its segments sinuated, rough, pitted, grey; black and shaggy beneath. Shields bright chesnut.**SYN.** Lichen faxatilis. *Linn. Sp. Pl.* 1609. *Huds.* 531. *Lichtf.* 816. *With.* v. 4. 33. *Hull.* 294. *Relb.* 427. *Sibth.* 325. *Abbot.* 264.*Lichenoides crusta foliosa*, supernè cinereo-glauca, infernè nigra et cirrhosa, scutellis nigricantibus. *Raii Syn.* 72.*L. vulgatissimum cinereo-glaucum lacunosum et cirrhosum.* *Dill. Musc.* 188. t. 24. f. 83.

THOUGH called faxatilis, this Lichen is no less common on trunks of trees in every situation, than on rocks and stones in the more mountainous counties. It is found all the year round, but by no means generally in fructification. Large old spreading rock specimens are most likely to be met with in that state; and such are often rough with small grey branching mealy warts, especially about the centre.

The fronds spread circularly in a rugged imbricated manner, and are of a grey or ash colour above, full of pits and warty projecting lines; underneath they are quite black, and clothed with dense branching short black hairs, but not quite to the outer edge, which is brown and shining. The shields are a little elevated; externally of the colour of the frond, with a broad incurved mealy edge; internally of a bright polished chesnut or bay colour. Dillenius assures us from the examination of original specimens, that *Lichenoides* No. 65, *Raii Syn.* 73. is merely a variety of this; and justly remarks that the plant often acquires red and rusty stains during winter. We believe such stains to be owing to the urine of animals, which from its alkaline quality tinges many Lichens red,



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[1780]

LICHEN Borreri.

*Borrerian Lichen.**CRYPTOGAMIA Algae.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, slightly imbricated, tawny grey, even, sprinkled with white powdery warts; its segments sinuated, rounded at the ends: brown and fibrous beneath. Shields bright chesnut.

SYN. *Parmelia Borreri*. Turn. MSS.

THIS has certainly been overlooked by all botanists for *L. saxatilis*, t. 603, till Mr. W. Borrer distinguished it, whom Mr. Turner has justly commemorated in its name. Those great cryptogamists Professors Acharius and Swartz having allowed it to be a distinct species, we cannot refuse our assent.

L. Borreri is observed by its first discoverer to be not uncommon on the trunks of trees, especially fruit-trees, in Sussex. It is also met with on stones. Mr. Turner has noticed it about Norwich and Coltishall, nor is it, probably, uncommon in other places. The shields are of very rare occurrence, but these scarcely differ from those of *L. saxatilis*. The frond is observed to differ from the latter, with which it often grows intermixed, in being less deeply divided, its segments more dilated and rounded, its under side paler and less densely hairy, and its upper more inclined, when moist, to a greenish yellow hue. Its essential difference, however, consists in its want of those elevated reticulated powdery veins, and consequent pits, always observable in the *saxatilis*; while, on the contrary, it is sprinkled with innumerable round, white, powdery warts over the surface, not seen in that species.

1780

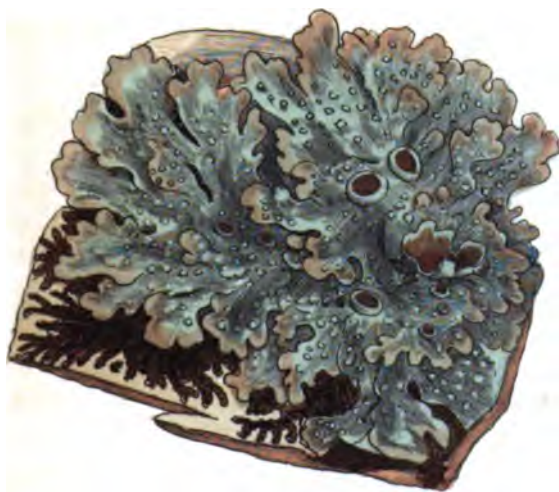


Fig. 1. 187. Published by J. L. Sowerby, London.

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[1852]

LICHEN lævigatus.
Even Grey Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, slightly imbricated, greyish white, very smooth even and veinless, with terminal warts; its segments linear and acute: black and shaggy beneath, Shields chesnut.

THIS elegant and remarkable Lichen, of which we can meet with no description nor figure, was discovered on rocks in Anglesea and Caernarvonshire, by our often-mentioned friend the Rev. Hugh Davies, to whom alone we are indebted for specimens,

It forms loose flat patches. The fronds are loosely imbricated, entangled with mosses, &c., cut into narrowish, linear, though somewhat dilated and fan-shaped, segments, whose terminal lobes are divaricated and acute. The upper surface is of a pale whitish unchangeable grey, peculiarly smooth and even, without veins, pits, or warts, the latter only occurring, of large size, at the ends of some of the lobes. The under surface is black, shaggy with strong, branched, coal-black hairs. Shields scattered, not large, concave, chesnut-coloured, with a smooth border like the crust. They easily break, from age or accident.

It seems to us that this species has more natural affinity to *physodes*, t. 126, than to *tiliaceus*, t. 700, *saxatilis*, t. 603, or *perlatus*, t. 341.

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LICHEN phyfodes.

*Inflated Lichen.*CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, the segments obtuse, composed of a double membrane, and slightly inflated.

SYN. Lichen phyfodes. *Lin. Sp. Pl.* 1610. *Hudf. Fl.* 42. 533. *Wub. Bot. Arr.* v. 3. 187. *Relb. Cant.* 429.

Lichenoides ceratophyllon obtusius et minus ramosum.

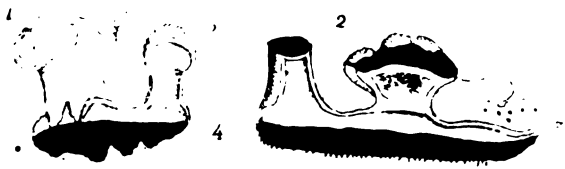
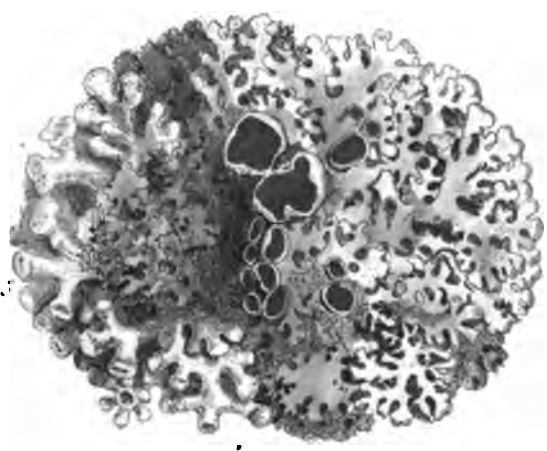
Reb. Syn. 76. *Dill. Musc.* 154. t. 20. f. 49.

NOT uncommon on trunks of trees, old pales, large stones, and barren inland moors, frequently growing slightly attached to the stems of herbs, and very conspicuous from its bleached white colour, and its elegantly divided and curled form, but the female are very rarely indeed to be found. Our specimen was gathered in Oxford Moor, near Matlock, by Dr. Smith, who is reminded of another from Malvern Hills, Worcestershire, in which (contrary to the remark of Dillenius) the powdery seminiferous (1) and the shields (2) are on the same individual plant. This powdery part, which Dr. Hedwig considers as the male flower, is frequently seen, though the shields are so very rare that we could hardly present the reader with a greater botanical curiosity. We are therefore inclined, from this circumstance, and from the analogy of *L. clavus* (see *Wub.* v. 3. 30) as well as the habit with (3) are rather the male flowers.

This fungus is remarkable for being always composed of two membranes, the underneath black, the upper white, with a continuous canal between them. Sometimes the plant grows out into large cylindrical powdery protuberances, which are likewise hollow. Our figure represents a group of different individuals or various stages, not all from one root.

Linnaeus in his quotation of *Lin. Fl. Lapp.* confounds this with *L. clavus*.

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[1248]

LICHEN diatrypus.

*Perforated Lichen.*CRYPTOGAMIA *Alge.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, depressed, composed of a double membrane, black beneath, pale grey above; segments obtuse, inflated and perforated. Shields concave, small, reddish.

SYN. Lichen diatrypus. *Achar. Prod.* 116.

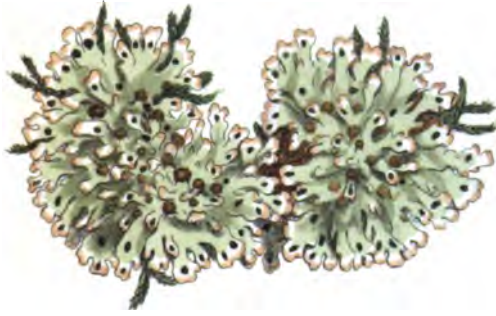
L. pertusus. *Schrad. Spicil.* 96.

Parmelia diatrypa. *Achar. Meth.* 251.

Lobaria terebrata. *Hoffm. Germ. v. 2.* 151.

ON mossy rocks and trees in alpine situations, but never observed in Britain, till Mr. Turner gathered it at Beddgelart at the foot of Snowdon in the summer of 1800.

Wulfen, who has given a figure of this Lichen without fructification in the 3d vol. of Jacquin's *Collectanea*, confounds it with *L. physodes*, see our *v. 2. t. 126*. Dr. Schrader first pointed out their true differences. They both indeed consist of a double membrane, with a considerable vacuity between the two coats, as is the case with 2 or 3 American species lately discovered by the accurate Mr. Menzies; but *L. diatrypus*, besides being more depressed, with a certain air of neatness and regularity in its lobes, is remarkable for having a regular round perforation in the middle of most of its segments, quite through the upper coat. The shields are also, as Schrader well remarks, but half the size of those of *physodes*, nearly sessile, smooth, not wrinkled, in their margin and outside. Powdery warts in abundance grow on the same plant with the shields.



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The young plants usually arise from old dead wood, attached to which they always are immovably. Their substance is thin, they become much enlarged at a pale brownish or yellowish grey, their margin indeed early elevated, crenate, imbricate. The centre of the plant as time becomes a con-
 crete of small bumps and swellings, without any leafy ap-
 pearance. The stems are of various sizes, round when young,
 often very irregular, and frequently lobed, elevated on cen-
 tral parts, thick, their sides flat beneath of a rusty or chestnut
 brown, the margin above, a line elevated, white, irregularly
 striated, slightly



March 1. 1841. Published by J. L. Sowerby, London

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LICHEN conspersus.
Greenish Chestnut-shielded Lichen.

CRYPTOGAMIA Alge.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, radiated, membranous, pale glaucous green, besprinkled with blackish points; granulated in the centre; brown with black fibres beneath; its segments lobed and sinuated, with dilated, rounded extremities. Shields towards the centre, chestnut, with an inflexed border like the leaf.

STEM. Lichen conspersus. Ach. Prod. 118.

L. centrifugus. H. B. 550. With. r. 4. 32. Hull.

224. L. v. 514.

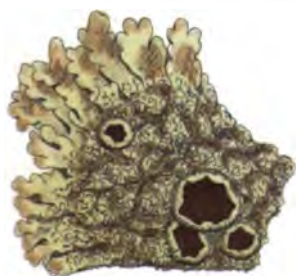
Lichenides imbricatum viridans, scutellis badius. Dill.

Mus. 190. t. 24. f. 75.

Parmelia conspersa. Ach. Meth. 205. Winch Guide, v. 2. 56.

THIS very handsome Lichen grows on stones and rocks in the north, making a very fine appearance in wet weather, as we saw it about Edin and Moffat in the south of Scotland, where we gathered these specimens in 1782. They have suffered no alteration since, but on being at any time moistened, resume their original hue, which is only rather less green and more when dry.

The same characters sufficiently describe the species. It ranges near our *viridans*, t. 5050, but belongs to a section with broader segments, containing *scortens*, t. 2065, *capereus*, t. 514, &c. The chestnut disk of the shields at length fits out, leaving its basis of the colour of the leaf. We have found a variety in Italy, whose under side is much paler, approaching, in that respect, the true Linnæan *centrifugus*; but the latter is essentially distinguishable by its narrow linear pale segments, almost white (with blackish fibres) beneath, and, as Professor Afzelius informs us, spreads into curves many feet in extent, whose centre decays and disappears so with a hand's-breadth of the edge. Our whole plant is never above 6 inches wide, and but slightly decays in the middle. D. con. as first contemplated them.



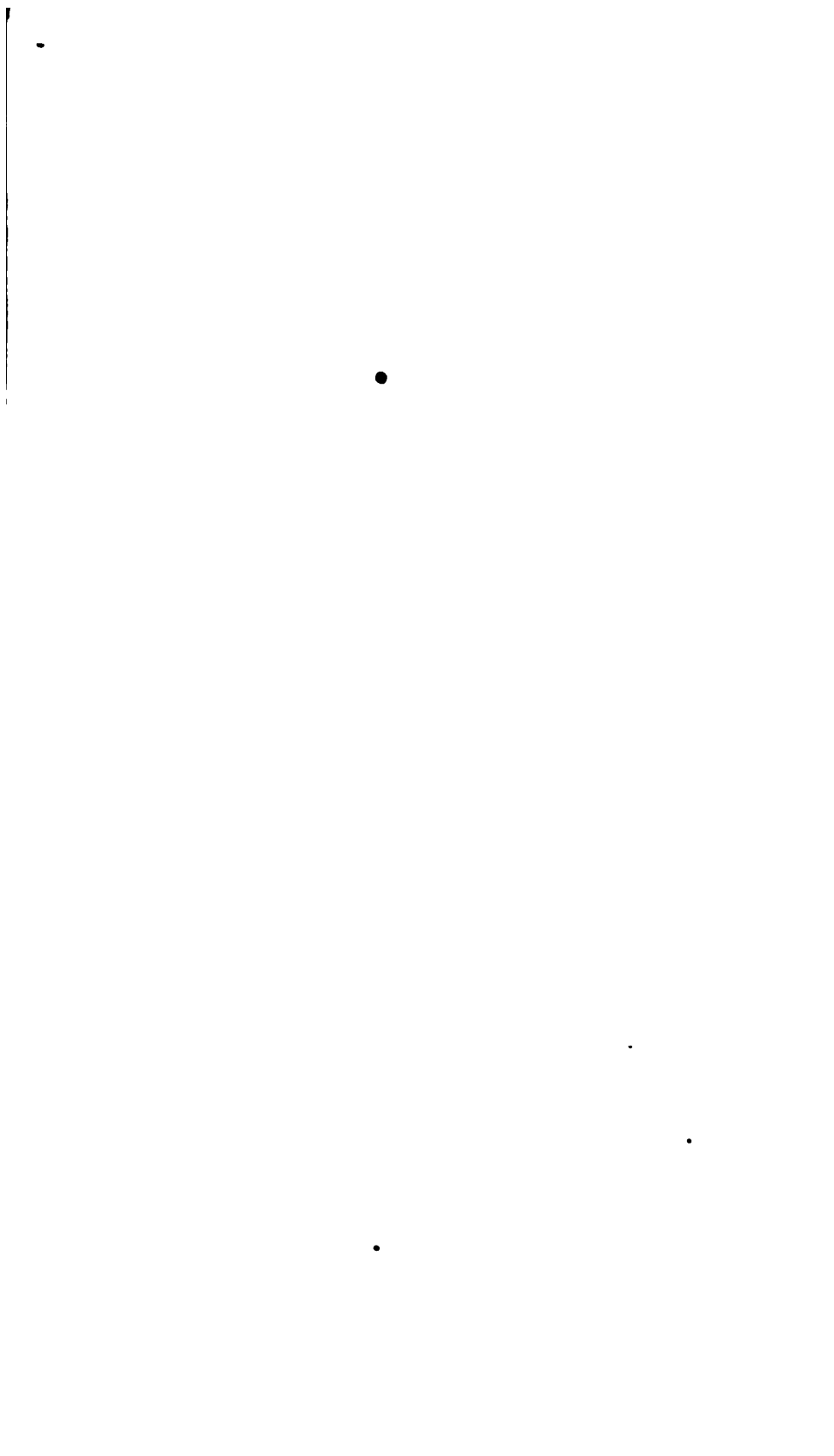
[250]

LICHEN *sinuosus*.*Stimulus Intricately Lichen.**HYPOBOLIA* *Ag.*GEN. CHAR. *Rare, scattered with**Female, slender shields or lobes, in which the*
*sexes are intermixed.**Spec. CHAR. Intermixed, radiated, membranous, smooth,*
in a sulphureous grey: black with dense fibres be-
neath: in segments pointed, with dilated cloven
lobes and slender sinuses. Shields brown, with a
thin, smooth, entire, grey border.

THE LICHEN Mr. James Burgess Mac-Garoch, only son of the discoverer of *Lichen Surpinch*, L. 300, sent us this *Lichen* so long ago as August 1754, saying it was "common on moor-tops in Dumfriesshire," and without fructification. We had never it until now, and a more extensive knowledge of the subject by correspondence with Dr. Acharius and others has but confirmed that opinion. Mr. Turner and Mr. W. J. Sowerby gathered it on oak walls at Ballachulish. Mr. Acharius communicated a specimen of the same, on the bark of a tree from Nova Scotia, to which we have had recourse for the shields.

The fronds spread circularly, in a radiating form, in flat patches several inches wide, and are thin, membranous, smooth, even, of a very pale subbarrenous grey, more or less sinuate, on the inner side excessively cracked when old; the outer surface is clothed with very black, dense, rigid, branching fibres, radiate beyond the edges. The lobes are somewhat linear, pointed, branched and dilated outwards, strongly distinguished by the roundness of their sinuses; the ends are entire and cloven. Shields when present numerous, slightly elevated, as broad as a vetch-seed or small pea, of the same dark fuscous, dark-brown; their border of the substance and colour of the frond, peculiarly thin, smooth and even.

The species ranges near the *centrifugus* and *compertus* of Acharius.



[1794]

LICHEN candelarius.

Yellow Candle Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Fronds crowded, upright, entangled, yellow, minutely lobed, jagged, and divaricated. Shields minute, flat, of the same colour, with a thick inflexed margin.

SYN. Lichen candelarius. *Linn. Sp. Pl.* 1608. *Fl. Suec. ed.* 2. 408. *Ach. Prod.* 92. *Westring. Lafv. fasc.* 2. 21. t. 5. *Hoffm. Enum.* 57. t. 9. f. 3. *Relh.* 457?*L. concolor.* *Dicks. Crypt. fasc.* 3. 18. t. 9. f. 8. *With. v.* 4. 62. *Hull.* 298. *Abbot.* 265.*Parmelia candelaria.* *Ach. Meth.* 187.

NOT very unfrequent on old oaks, barn doors, posts, or rocks, in which last situation we first noticed it at Blackford hill near Edinburgh in 1782. Our botanists in general have confounded it with *L. vitellinus*, t. 1792, from which, considered as the true *candelarius*, Mr. Dickson justly distinguished this by the apt name *concolor*. Although the Linnæan herbarium contains no authentic specimen, we must rely on the Swedes for determining this species, it being well known among them, and used for staining candles yellow at festivals. The admirable plate in Mr. Westring's work on the uses of Swedish Lichens in dyeing, drawn by no less a hand than the celebrated Acharius himself, clearly ascertains the plant.

The fronds are seldom more than a quarter of an inch high, and grow in dense patches, upright, but closely entangled, and when young somewhat imbricated. Each is much branched and divaricated, flattened, minutely and sharply cut and jagged; the ultimate segments obtuse, rather powdery. Shields small, scattered, lateral, nearly sessile, flattish, with a thick inflexed border externally warty. The colour of the whole varies from a pale greenish lemon to a golden hue, but the bases of the fronds are pale or whitish, and the disk of the shields orange.

We conceive this to be by no means a crustaceous Lichen, and that it is more allied to *vulpinus* than to any with which it has been compared or confounded.

1794



Sept. 1. 1807. Published by J. Sowerby, London.

LICHEN polycarpus.
Yellow Many-fruited Lichen.

CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Fronds creeping, crustaceous, wrinkled, greyish yellow, lobed and toothed. Shields very numerous, crowded, flat, orange, with a thick inflexed, greenish margin.

SYN. Lichen polycarpus. *Ehrh. Crypt.* 136.

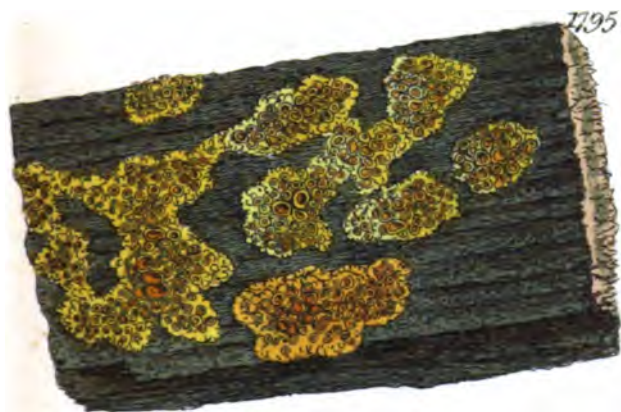
Lobaria polycarpa. Hoffm. Fl. Germ. v. 2. 159.

Parmelia candelaria β. *Ach. Meth.* 187.

FOUND frequently on wooden rails and pales long exposed to the weather. Mr. Turner showed it to us in great perfection near Yarmouth, whence our specimen was taken.

The fronds when young form little round patches, of a greenish grey tinged with yellow when growing on branches of trees, or in the shade, but in exposed sunny places they assume more of a golden hue. They creep slowly over the wood, and are wrinkled or pockered, their margin lobed and jagged. By age they assume the appearance of a wide-extended, broken or scattered, crust. The under part and inner substance are whitish. Innumerable shields, elevated on thick short stalks, cover the frond even from its earliest growth, and at length not only crowd but overlay one another. Their disk is flattish, always deep orange-coloured; their margin of the hue of the frond, inflexed, thick when young, at length thinner and sharpish.

L. candelaria often grows intermixed with this, but their fronds appear to us perfectly distinct in nature under every variety of form. *L. polycarpus* may perhaps have been taken by some British botanists for *jaupurinus*, a species not found in this country.



Ort. 1795. Published by J. S. Sowerby London.

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LICHEN parietinus.

*Yellow Wall Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated. Leaves crisped, obtuse, orange-coloured, whitish beneath. Shields deep orange, with a paler entire margin.

SYN. Lichen parietinus. *Linn. Sp. Pl.* 1610. *Huds. Fl. An.* 533. *With. Bot. Arr. v.* 3. 186. *Relb. Cant.* 428. *Sibth. Oxon.* 326. *Lightf. Scot.* 822. Lichenoides crusta foliosa scutellata, flavescens. *Raii Syn.* 72.

L. vulgare sinuosum, foliis et scutellis luteis. *Dill. Musc.* 180. t. 24. f. 76.

β. Lichen juniperinus. *Huds. Fl. An.* 542. *With. Bot. Arr. v.* 3. 197. *Lightf. Scot.* 836.

THIS is common every where, and at all seasons, on walls, stones, trunks of trees, posts, &c. The more it is exposed to the sun, the deeper is its orange colour. Moisture and shade render it more lax, leafy, and of a greenish or pale olive hue. So it most commonly appears on trees and bushes. This we have marked as a variety (β) and it is the L. juniperinus of our British writers, though by no means that of Linnæus.

The under side is white, especially towards the centre, and adheres to bodies on which it grows by white fibres. The divisions of the frond are more or less imbricated, often wrinkled, and sometimes powdery. The shields numerous, their disk either deep orange or brownish. Lightfoot says this Lichen will dye yellow. Helwing formerly asserted, that when moistened it would stain paper or linen of a beautiful and lasting flesh-colour; a property which Dillenius could not discover, and which we have looked for repeatedly in vain.



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LICHEN *olivaceus*.
Olive-coloured Leafy Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, creeping, orbicular, brown-olive, shining, rugged in the centre; brownish and fibrous beneath: its lobes flat, dilated, cut and dotted. Shields dark-chesnut-olive, with an inflexed unequal margin.

SYN. *Lichen olivaceus.* *Linn. Sp. Pl.* 1611. *Ach. Prod.* 121. *Huds.* 532. *With. v. 4.* 35. *Hull.* 295. *Relh.* 462. *Sibth.* 325. *Abbot.* 263.

Lichenoides olivaceum, *scutellis lævibus.* *Dill. Musc.* 182. *t.* 24. *f.* 77: also *f.* 78.

L. crustâ foliosâ scutellatâ, *pullum.* *Raii Syn.* 72.

Parmelia olivacea. *Ach. Meth.* 213. *Winch. v. 2.* 56.

FAR from rare on pales or the smooth barks of trees. It is often peculiarly conspicuous on the white cuticle of the birch, and is readily known from all our other creeping or imbricated Lichens by its shining olive colour, little altered by wet or by drought. The patches are from 2 to 4 inches broad, sometimes much granulated and rugged in the central part, and usually, but not always, besprinkled throughout, as well as the borders of the shields, with papillary warts. The disk of the shields is rather concave and uneven, of a more chesnut cast than the frond, or their own borders. They are smooth and even at the back, not rugged like *L. corrugatus*, *t.* 1639.

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Fig. 1. - as published by J. S. Sowerby, London.

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LICHEN corrugatus.
Wrinkled-shielded Lichen.

CRYPTOGAMIA Algae.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, creeping, plaited, somewhat rugged, of a dark glaucous green; underneath blackish and fibrous: its lobes rounded and imbricated. Shields concave, rusty brown, externally wrinkled, with a notched and wrinkled margin.

SYN. Lichen corrugatus. *Tr. of Linn. Soc. v. 1. 83.*

Ach. Prod. 122. Schrad. Spicil. 98.

Lichenoides acetabulis cutaneis et rugosis. Dill. Musc. 185. t. 24. f. 79.

Parmelia corrugata. Ach. Meth. 215.

I HAD the good fortune to gather the first specimen of this Lichen ever observed in Britain on a tree on the borders of Saham wood, Norfolk, in 1799, but could discover no shields. The Rev. G. R. Leathes has since found in the Earl of Bristol's park near Bury the specimen in our plate with a few shields; these however are not in such absolute perfection but that Mr. Sowerby has found it expedient to subjoin one of foreign growth. In Germany, France, Switzerland, and even Sweden, this species is far from rare, but, strange to tell! has been taken for *L. olivaceus*. Necker long ago described it by the name of *Acetabulum*, indolently taken from the synonym of Dillenius, but too faulty in its application and construction to be tolerated. That of *corrugatus* expresses the essential character of the singularly wrinkled backs of the shields.

It is one of the larger imbricated Lichens, spreading in broadish patches, and known by its very dark green colour, approaching to that of the gelatinous tribe. When dry it is most glaucous. The shields are concave, rugged, red-brown, often half an inch broad; their outside coloured like the crust but lighter, more or less wrinkled; their margin inflexed, thin, notched, rugged, and often mealy.

1652



Published by J. S. Kew, London.

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LICHEN caperatus.

Wrinkled Sulphur Lichen.

CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, creeping, lobed, wrinkled, of a pale sulphur-colour; its margin rounded and crenate. Shields bright chestnut, with a mealy edge.

SYN. Lichen caperatus. *Lim. Sp. Pl.* 1614. *Huds.* 543. *With. v. 4.* 58. *Hull.* 297. *Relb.* 433. *Sibth.* 330. *Abbot.* 264. *Dicks. Dr. Pl.* 22.

Lichenoides crustâ foliosâ, ex cinereo et luteo virecente supernè, infernè nigrâ et lævi. Raii Syn. 73.

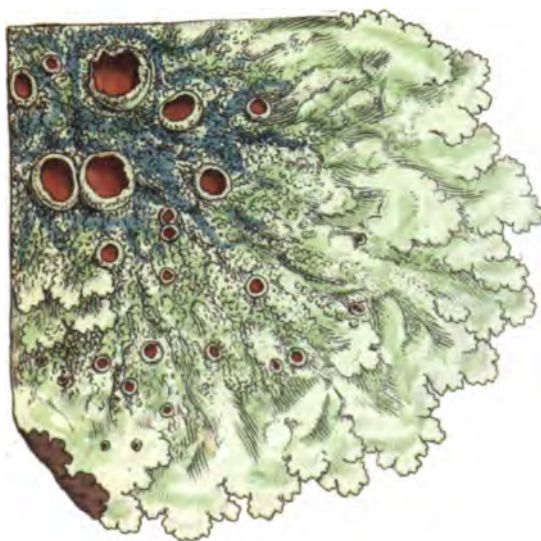
L. caperatum, rosaceè expansum, e sulphureo virens. Dill. Musc. 193. *t.* 25. *f.* 97.

Platisma caperatum. Hoffm. Pl. lich. v. 2. 50. *t.* 38, 39, & 42. *f.* 1.

THIS is one of our most handsome Lichens. It occurs not unfrequently on large trees, forming a sulphur-coloured patch, conspicuous among the grey or green hues that usually clothe their bark; but the fructification is extremely rare. Mr. Sowerby and Mr. D. Turner gathered our very fine specimen in Cornwall, on large granite stones. Hoffmann's *t.* 39 is one of the most admirable figures any where to be seen, and much preferable to what he has copied from Jacquin's *Collectanea*.

L. caperatus is so named from its being transversely wrinkled, like a goat's horn, which is scarcely to be seen but in old specimens, and is not peculiar to the species. It forms patches often a foot in diameter, lying close to the bark or stone, destitute of hairs on both sides; of an elegant pale sulphur-colour above, frequently powdery or granulated; black beneath. The shields are a little elevated, externally of the colour of the leaf, smooth towards the base, mealy or granulated at the margin; their inside of a bright reddish chestnut.

654.



Des. 170, Tab. 102, 1028

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LICHEN scorteus.
Leathery Granular Lichen.

CRYPTOGAMIA Algæ.

- GEN. CHAR. Male, scattered warts.
 Female, smooth shields or tubercles, in which the seeds are imbedded.
- SPEC. CHAR. Leafy, slightly imbricated, greyish-white, even and smooth, besprinkled with innumerable dark granulations; its segments rounded, lobed and wavy; black and rough beneath. Shields bright chesnut.
- SYN. Lichen scorteus. *Ach. Prod.* 119.
 L. tiliaceus. *Ehrh. Crypt.* 59.
 L. n. 955. *Leers. Herborn.* 258.
 Parmelia scorteæ. *Ach. Meth.* 215.
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GATHERED on trees and pales in Sussex and Surrey by Mr. W. Borrer, who, like ourselves, has also received it from the Rev. Mr. Harriman and the Rev. G. R. Leathes, but it is always barren in Britain, as Leers, Ehrhart and Acharius found it on the continent. The latter however, since his *Methodus* appeared, has obtained the shields, and we are indebted to him for those in our plate. They are small, but otherwise exactly like those of *saxatilis*, and other species allied to it, for in this tribe of Lichens the specific differences are chiefly observable in the frond.

This has the habit of *saxatilis*, *t.* 603, and *Borreri*, *t.* 1780, but is neither pitted or reticulated like the former, nor besprinkled with white powdery warts like the latter; while it further differs from both in having its central part all covered with innumerable, minute, dark, powdery granulations, each tipped with white. From *tiliaceus*, *t.* 700, and *lavigatus*, *t.* 1852, it abundantly differs. The lobes are a little dilated, very smooth and even, rounded, notched and wavy, of a light-greyish white, not shining, but very conspicuous when dry. The under surface is clothed with very black fibres, almost to the extremities, which are rough and tipped with shining brown.



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See 11009 published by J. S. Hensley, London.

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LICHEN tiliaceus.

Smooth Grey Lichen.

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

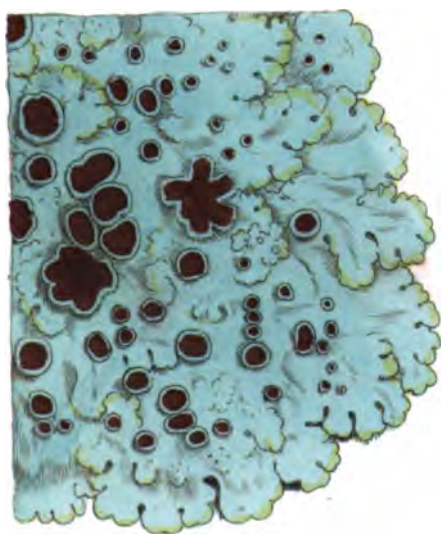
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated. Leaflets sinuated, rounded, of a greyish white. Shields brown, with a white smooth margin.

SYN. Lichen tiliaceus. (*Hoffm.*) *Sm. Tr. of Linn. Soc.* v. 1. 83. *Dicks. Crypt. fasc.* 3. 16. *With.* v. 4. 31. *Hull.* 294.*L. quercifolius.* *Wulf. in Jacq. Coll.* v. 3. 127. t. 9. f. 2.

THIS *Lichen*, very common and with copious shields on the trunks of Olive-trees in the South of France, has been found by the Rev. Mr. Hugh Davies on rocks in Anglesea and Carnarvonshire; and lately by Mr. D. Turner and Mr. Sowerby, in its more natural situation and appearance, on the trunks of oak-trees by the round tower at Dunster, Somersetshire, in great abundance, though sparingly in fructification, for the Lichens in general are most fruitful in southern climates.

It is most allied to *L. saxatilis* and *omphalodes*; but the great smoothness of its upper surface, and its more rounded, generally broader, lobes, distinguish it. The shields also are flatter, and their margin smooth and conspicuously white, never powdery or warty, as those of both the species just mentioned always are. Their disk is of a bright bay-colour, greenish when wet. The under side of the frond, as in those species, is shaggy and coal-black; in which respect, as well as size, and the want of green mossy balls, it differs from *L. glomuliferus* figured in our 5th vol. t. 293, with which the ingenious Abbé Wulfen confounded it.



Cladonia rangiferina (L.) Fr.





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